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Service Manual

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Published by WO 0561 Service PaCE Printed in the Netherlands Subject to modification EN 3122 785 14711

PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

1.1 Technical Specifications

1.1.1 Vision

Display type	:	DV-LCD-IPS
	:	15:9
Screen size	:	30" (76 cm)
Resolution (HxV pixels)	:	1280x768 (WXGA)
Contrast ratio	:	350:1
Light output (cd/m^2)	:	450
Viewing angle (HxV deg.)	:	176x176
Tuning system	:	PLL
Colour systems	:	PAL B/G, D/K, I
	:	SECAM B/G, D/K, L/L'
Video playback	:	NTSC 4.43/3.58,
	:	NTSC Play Back,
	:	PAL 60,
	:	PAL B/G Play Back,
	:	SECAM Play Back
Channel selections	:	100 presets
	:	UVSH
Supported formats	:	VGA (640x480)
	:	VGA (720x400)
	:	VGA (640x350)
	:	MAC (640x480)
	:	MAC (832x624)
	:	SVGA (800x600)
	:	XVGA (1024x768)
	:	WXGA (1280x768)

1.1.2 Sound

Sound systems	:	BI NICAM B/G
	:	2CS B/G
	:	NICAM B/G (5.5-5.85)
	:	NICAM D/K (6.5-5.85)
	:	NICAM I (6.0-6.52)
	:	NICAM L (6.5-5.85)
	:	FM/FM (5.5-5.74 B/G)
Maximum power (W_{RMS})	:	2 x 10

1.1.3 Miscellaneous

Power supply:		
- Mains voltage (V_{AC})	:	220 - 240
- Mains frequency (Hz)	:	50 / 60
Ambient conditions:		
- Ambient temperature (°C)	:	+5 to +40
- Maximum humidity	:	90% R.H.
Power consumption		
- Normal operation (W)	:	185
- Stand-by (W)	:	< 2

1.2 Connection Overview

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Rear Connections

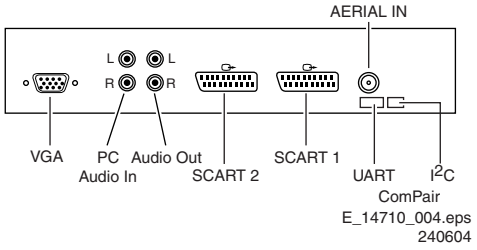

Figure 1-1 Rear connections

VGA: Video RGB - In

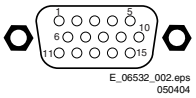

Figure 1-2 VGA Connector

1	- Video Red	0.7 V_{PP} / 75 ohm	⊕
2	- Video Green	0.7 V_{PP} / 75 ohm	⊕
3	- Video Blue	0.7 V_{PP} / 75 ohm	⊕
4	- n.c.		
5	- Ground	Gnd	⏚
6	- Ground Red	Gnd	⏚
7	- Ground Green	Gnd	⏚
8	- Ground Blue	Gnd	⏚
9	- +5V_DC	+5 V_{DC}	⊕
10	- Ground Sync	Gnd	⏚
11	- n.c.		
12	- DDC_SDA	DDC data	⊕
13	- H-sync	0 - 5 V	⊕
14	- V-sync	0 - 5 V	⊕
15	- DDC_SCL	DDC clock	⊕

Cinch: PC Audio - In

Rd	- Audio - R	0.5 V_{RMS} / 10 kohm
Wh	- Audio - L	0.5 V_{RMS} / 10 kohm

Cinch: Audio - Out

Rd	- Audio - R	0.5 V_{RMS} / 10 kohm
Wh	- Audio - L	0.5 V_{RMS} / 10 kohm

SCART 1: Video RGB/YUV-In, CVBS-In/Out, Audio-In/Out

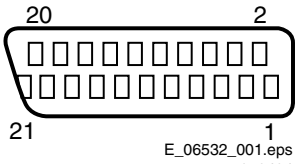

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Figure 1-3 SCART connector

1	- Audio R	0.5 V_{RMS} / 1 kohm	
2	- Audio R	0.5 V_{RMS} / 10 kohm	
3	- Audio L	0.5 V_{RMS} / 1 kohm	
4	- Ground Audio	Gnd	
5	- Ground Blue	Gnd	
6	- Audio L	0.5V_{RMS} / 10 kohm	
7	- Video Blue/U	0.7 V_{PP} / 75 ohm	
8	- Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	- Ground Green	Gnd	
10	- n.c.		
11	- Video Green/Y	0.7 or 1 V_{PP} / 75 ohm	
12	- n.c.		
13	- Ground Red	Gnd	
14	- n.c.		
15	- Video Red/V	0.7 V_{PP} / 75 ohm	
16	- FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	
17	- Ground Video	Gnd	
18	- Ground FBL	Gnd	
19	- Video CVBS	1 V_{PP} / 75 ohm	
20	- Video CVBS	1 V_{PP} / 75 ohm	
21	- Shield	Gnd	

SCART 2: Video CVBS/YC - In/Out, Audio - In/Out

1	- Audio R	0.5 V_{RMS} / 1 kohm	
2	- Audio R	0.5 V_{RMS} / 10 kohm	
3	- Audio L	0.5 V_{RMS} / 1 kohm	
4	- Ground Audio	Gnd	
5	- Ground Blue	Gnd	
6	- Audio L	0.5 V_{RMS} / 10 kohm	
7	- Video C	0.7 V_{PP} / 75 ohm	
8	- Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	- Ground Green	Gnd	
10	- Easylink P50	0 - 5 V / 4.7 kohm	
11	- n.c.		
12	- n.c.		
13	- Ground Red	Gnd	
14	- Ground P50	Gnd	
15	- Video C	0.7 V_{PP} / 75 ohm	
16	- n.c.		
17	- Ground Video	Gnd	
18	- n.c.		
19	- Video CVBS	1 V_{PP} / 75 ohm	
20	- Video Y/CVBS	1 V_{PP} / 75 ohm	
21	- Shield	Gnd	

Aerial - In

- IEC-type	Coax, 75 ohm

1.2.2 Side I/O connections

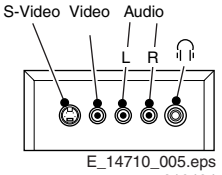

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Figure 1-4 Side I/O connections

SVHS (Hosiden): Video Y/C - In

1	- Ground Y	Gnd
2	- Ground C	Gnd
3	- Video Y	1 V_{PP} / 75 ohm
4	- Video C	0.3 V_{PP} / 75 ohm

Cinch: Video CVBS - In, Audio - In

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} / 10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

Mini Jack: Audio Head phone - Out

Bk	- Head phone	32 - 600 ohm / 10 mW

1.3 Chassis Overview

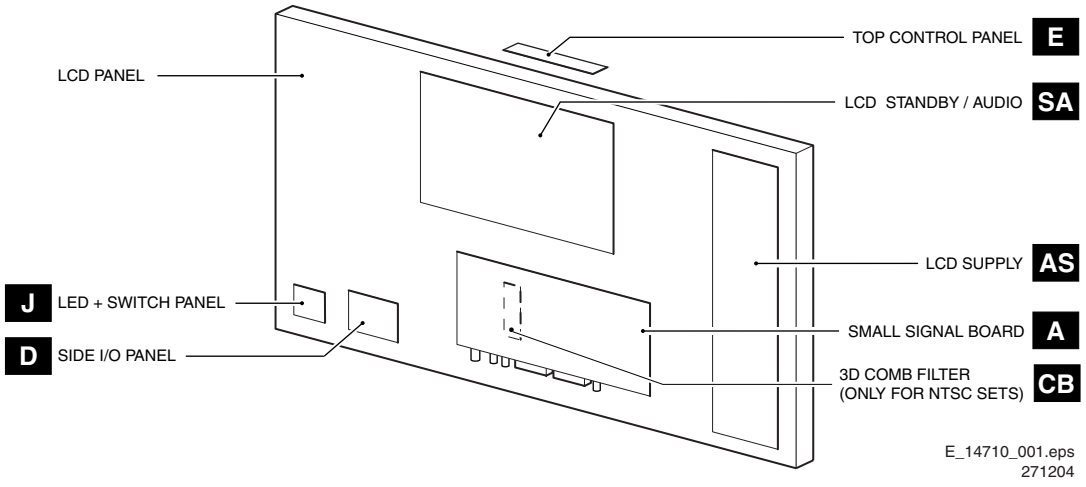

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Figure 1-5 Chassis Overview

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the mains via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the strain relief of the mains cord for proper function.
- Check the electrical DC resistance between the mains plug and the secondary side (only for sets which have a mains isolated power supply):
  1. Unplug the mains cord and connect a wire between the two pins of the mains plug.
  2. Set the mains switch to the "on" position (keep the mains cord unplugged!).
  3. Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the mains plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  – Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  – Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⊓) and without (⊼) aerial signal. Measure the voltages in the power supply section both in normal operation (⏻) and in stand-by (⏲). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic” and the “double-D symbol”, are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads (μ= x10^{-6}), nano-farads (n= x10^{-9}), or pico-farads (p= x10^{-12}).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Electrical Replacement Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General

Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal

As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation

When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.
After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information
For more information on how to handle BGA devices, visit this URL: *http://www.atyourservice.ce.philips.com* (needs subscription). After login, select “Magazine”, then go to “Workshop Information”. Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead Free Solder

Philips CE is going to produce lead-free sets (PBF) from 1.1.2005 onwards.

Figure 2-1 Lead-free logo

This sign normally has a diameter of 6 mm, but if there is less space on a board also 3 mm is possible.

Regardless of this logo (is not always present), one must treat all sets from this date onwards according to the following rules.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able
  - To reach at least a solder-tip temperature of 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch “off” unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If not to avoid, clean carefully the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened short before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-)pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!). **Do not re-use BGAs at all**!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:

- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid mix of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions)
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair help desk.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages**. While some may not be dangerous in themselves, they can cause unexpected reactions - reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

4. Mechanical Instructions

Index of this chapter:

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order.

4.1 Cable Dressing

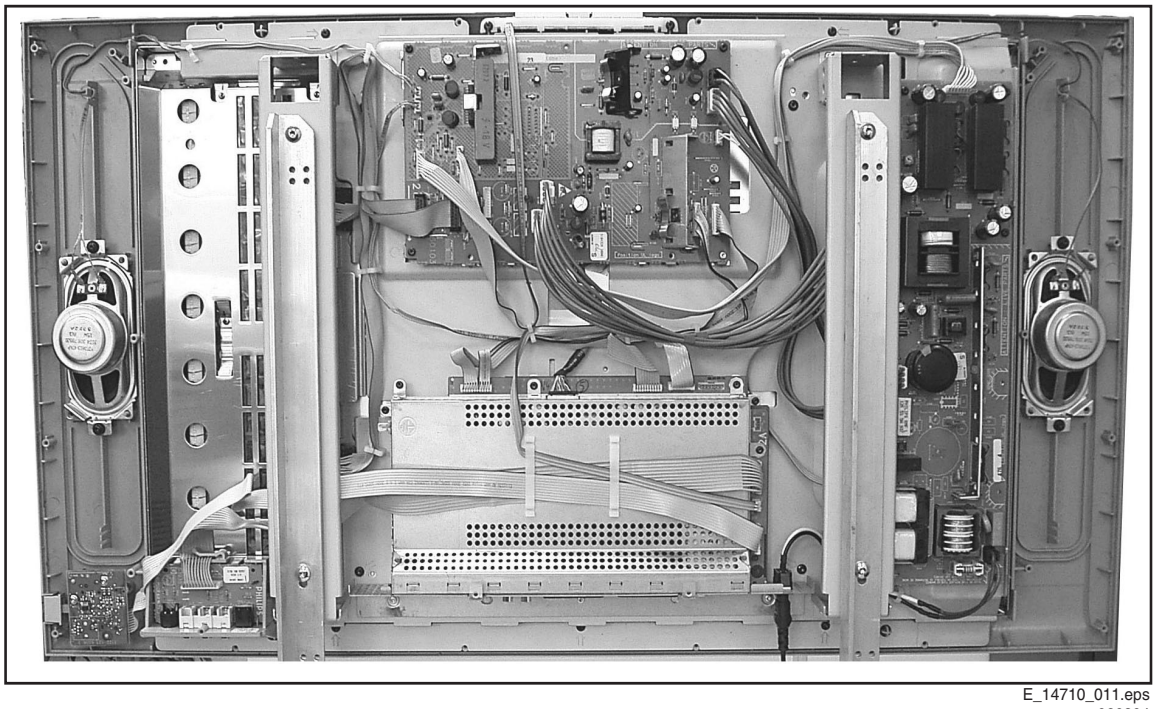

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Figure 4-1 Cable dressing

4.2 Service Position

First, put the TV set in its service position. Therefore, place it upside down on a table top (use a protection sheet or foam bars).

4.2.1 The Foam Bars

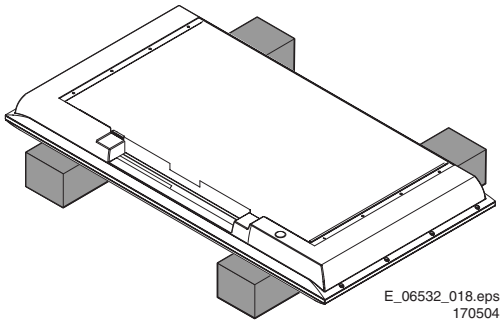

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Figure 4-2 Foam bars

The foam bars (order code 3122 785 90580) can be used for all types and sizes of Flat TVs. By laying the plasma or LCD TV flat on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. By first placing a mirror flat on the table under the TV you can easily see if something is happening on the screen.

4.2.2 The Aluminium Stands

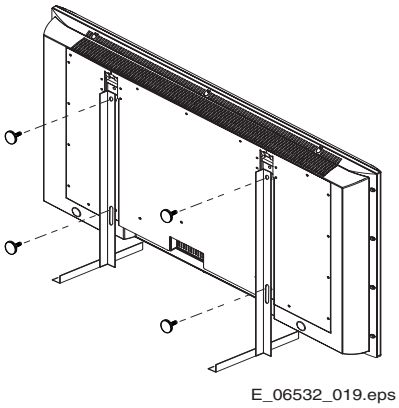

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Figure 4-3 Aluminium stands

The aluminium stands (order code 3122 785 90480) can also be used to do measurements and alignments. The stands are also very suitable to perform duration tests. With this stands the set does not take much space, has no risk of over heating, and/or falling. The stands can be mounted and removed quickly and easily with use of the provided screws, which can be tightened and loosened manually without the use of tools.
Caution: Only use the screws provided, otherwise it is possible to damage the monitor inside.

4.3 Assy/Panel Removal

4.3.1 Rear Cover

Warning: Disconnect the mains power cord before you remove the rear cover.

1. Remove the screws, which secure the rear cover. The screws are located at the top, bottom, left and right sides; next to the Side/IO connections and SCART connection. There are also three deeper located screws next to the stands.
2. Lift the rear cover from the cabinet. Make sure that wires and flat foils are not damaged during cover removal.

4.3.2 Side I/O Panel

1. Disconnect the cable from the panel.
2. To replace the complete bracket, remove the two fixation screws on either side of the panel.
3. Release the two fixation clamps and lift the panel out of the bracket.

4.3.3 LED + Switch Panel

1. Remove the two fixation screws.
2. Disconnect the cable from the rear of the panel.

4.3.4 Top Control Panel

1. Remove the two fixation screws.
2. Release the two fixation clamps and lift the panel out of the bracket.

4.3.5 Small Signal Board (SSB)

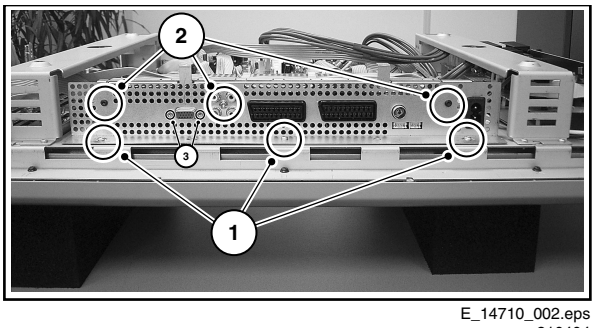

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Figure 4-4 SSB Connector plate

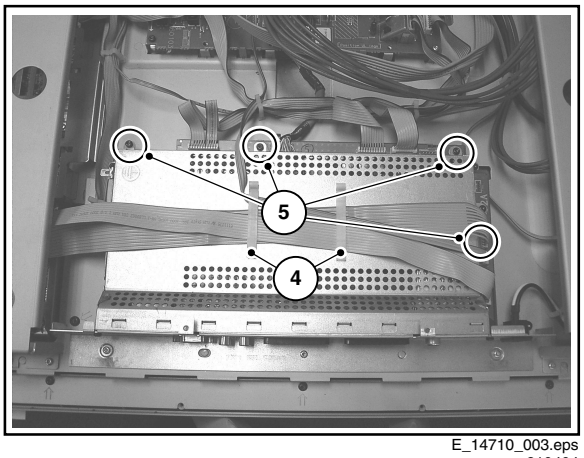

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Figure 4-5 Cover shield of the SSB

1. Remove the middle fixation screw (1) from the bottom side of the connector plate (as this holds the SSB bracket).
   Note: Sometimes it is easier to loosen the complete connector plate and remove it together with the SSB.
2. Remove all connector fixation screws (2) from the front side of the connector plate.
3. Remove the two female screw locks (3) of the VGA connector.
4. Release the plastic cable clips (4) on the shielding and disconnect all cables from the SSB.
   Note: Be careful with the fragile LVDS connector on the SSB.
5. Now, completely remove the SSB (together with all the shieldings) from the set.
6. Once the SSB is out, remove the fixation screws (5) from the shielding.
7. Remove the shielding, it hinges at the left side (acc. photo).
8. Remove the fixation screws that hold the panel, and take out the panel.

Notes:

- Pay special attention to the EMC foam on the SSB shielding. These must be replaced in their initial positions during set re-assembly.
- Insulate the tuner pins, so they cannot touch the shielding (see also figure “SDM Service jumper” in Chapter 5).

4.3.6 LCD Supply Panel

1. Disconnect all cables from the panel.
2. Remove the fixation screws from the panel.

4.3.7 LCD Stand-by/Audio Panel

1. Disconnect all cables from the panel.
2. Remove the fixation screws from the panel.

4.3.8 LCD Panel

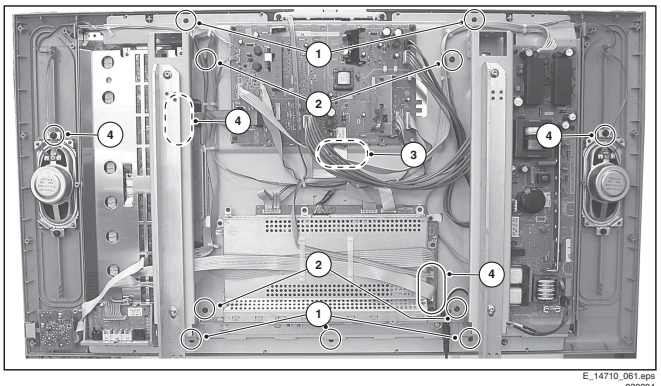

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Figure 4-6 LCD panel disassembly

1. Remove the T10 screws (1) from the mounting frame.
2. Remove all mounting LCD panel T20 screws (2).
3. **Important:** Unplug the LVDS connector (3) at the LCD panel. **Be careful**, as this is a very fragile connector!
4. Unplug the following connectors (4).
   - LCD back light (disconnect at the LCD side)
   - Loudspeaker (easiest to disconnect at the speaker and to release the cable holders a little.
   - Top Control cable (disconnect at SSB side).
   - Cable between LED/Switch panel and SSB.
5. Lift the metal frame (together with all PWBs) from the LCD panel.
6. After removal of the frame, you can lift the LCD display from the set.

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that all cables are placed and connected in their original position. See figure "Cable dressing".
- Pay special attention not to damage the EMC foams at the SSB shielding. Make sure that the EMC foams are put correctly in place.

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points

This chassis is equipped with test points in the service printing. In the schematics test points are identified with a rectangle box around Fxxx or Ixxx. These test points are specifically mentioned in the service manual as “half moons” with a dot in the centre.
Perform measurements under the following conditions:

- Television set in Service Default Alignment Mode.
- Video input: colour bar signal.
- Audio input: 3 kHz left channel, 1 kHz right channel.

5.2 Service Modes

Service Default mode (SDM) and Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between the call centre and the customer.

This chassis also offers the option of using ComPair, a hardware interface between a computer and the TV chassis. It offers the abilities of structured troubleshooting, error code reading, and software version read-out for all chassis.
Minimum requirements for ComPair: a Pentium processor, a Windows OS, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose

- To create a predefined setting for measurements.
- To override software protections.
- To start the blinking LED procedure.
- To inspect the error buffer.
- To check the life timer.

Specifications

Table 5-1 SDM default settings

Region	Freq. (MHz)	Default system
Europe, AP-PAL/Multi	475.25	PAL B/G
NAFTA, AP-NTSC, LATAM	61.25 (ch. 3)	NTSC M

- All picture settings at 50% (brightness, colour contrast, hue).
- Bass, treble and balance at 50%; volume at 25%.
- All service-unfriendly modes (if present) are disabled. The service unfriendly modes are:
  - Timer / Sleep timer.
  - Child / parental lock.
  - Blue mute.
  - Hotel / hospital mode.
  - Auto shut off (when no “IDENT” video signal is received for 15 minutes).
  - Skipping of non-favourite presets / channels.
  - Auto-storage of personal presets.
  - Auto user menu time-out.
  - Auto Volume Levelling (AVL).

How to enter

To enter SDM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: **“062596”** directly followed by the MENU button (do not allow the OSD display to time out between entries while keying the sequence).
- Short SDM jumper (item 4022, see Figure "Service jumper") on the TV board and apply AC Power. Remove the short after start-up.
  Caution: Entering SDM by shorting "Service" jumpers will override the software protections. Do this only for a short period. **When doing this, the service-technician must know exactly what he is doing, as it could damage the television set**.

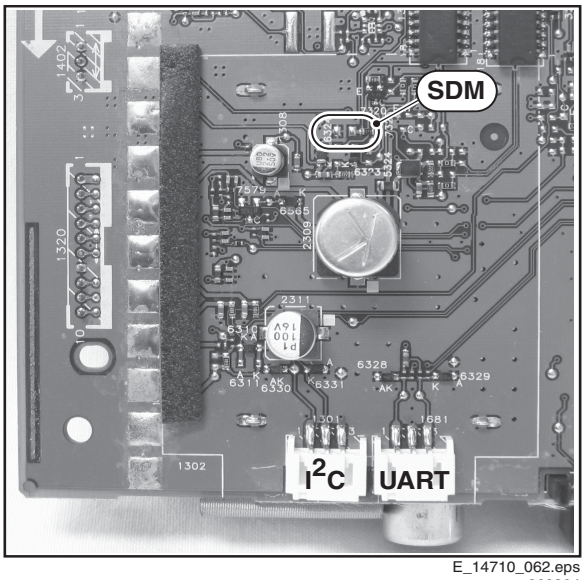

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Figure 5-1 SDM Service jumper

After entering SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Alignment Mode.

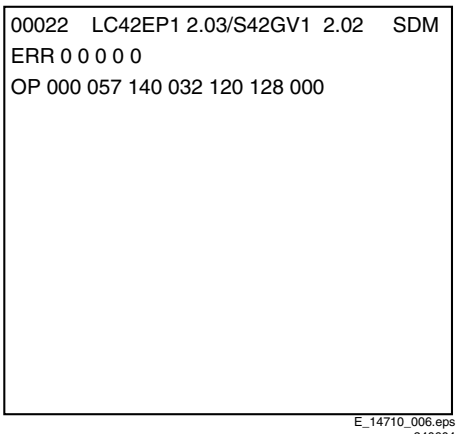

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Figure 5-2 SDM menu (example from LC4.2E)

How to navigate

When you press the MENU button on the remote control, the set will switch on the normal user menu in the SDM mode.

How to exit

Switch the set to STANDBY by pressing the POWER button on the remote control transmitter.

If you turn the television set off by removing the mains (i.e., unplugging the television) or by using the POWER button on the TV set, the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared.

5.2.2 Service Alignment Mode (SAM)

Purpose
- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications
- Operation hours counter (maximum five digits displayed).
- Software version, Error codes, and Option settings display.
- Error buffer clearing.
- Option settings.
- Software alignments (Tuner, White Tone, Geometry, and Audio).
- NVM Editor.
- ComPair Mode switching.

How to enter
Press the following key sequence on the remote control transmitter: **"062596"** directly followed by the OSD/STATUS/INFO button (do not allow the OSD display to time out between entries while keying the sequence).

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.

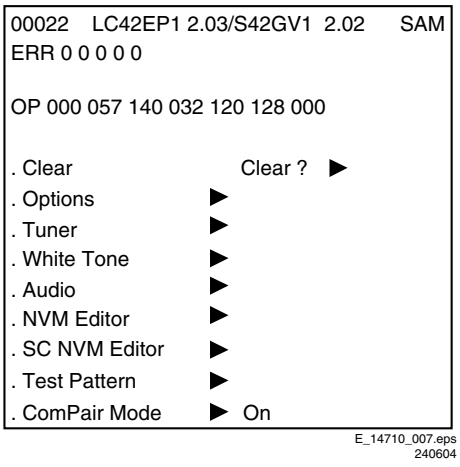


Figure 5-3 SAM menu (example from LC4.2E)

Menu explanation
1. **LLLLL.** This represents the run timer. The run timer counts normal operation hours (including "on/off" switching), but does not count stand-by hours.
2. **AAAABCD-X.YY/EEEEEE_F.GG.** This is the software identification of the Main/Scaler microprocessor:
   - **A**= the chassis name.
   - **B**= the region: E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM.
   - **C**= the software diversity:
     - **Europe:** T= 1 pg TXT, F= Full TXT, V= Voice ctrl.
     - **LATAM and NAFTA:** N= Stereo non-dBx, S= Stereo dBx.
     - **Asian Pacific:** T= TXT, N= non-TXT, C= NTSC.
     - **ALL regions:** M= mono, D= DVD, P= Pixel Plus, Q= Mk2.
   - **D**= the language cluster number.
   - **X**= the Main software version number (updated with a major change that is incompatible with previous versions).
   - **YY**= the sub software version number (updated with a minor change that is compatible with previous versions).
   - **EEEEEE**= the Scaler SW cluster
   - **F**= the Scaler SW version no.
   - **GG**= the sub-version no.
3. **SAM.** Indication of the Service Alignment Mode.
4. **Error Buffer (ERR).** Shows all errors detected since the last time the buffer was erased. Five errors possible.
5. **Option Bytes (OP).** Shows all option settings. See "Options" in the Alignments section for a detailed description. Seven codes are available.
6. **Clear.** Erases the contents of the error buffer. Select the CLEAR menu item and press the CURSOR RIGHT key. The content of the error buffer is cleared.
7. **Options.** Used to set the option bits. See "Options" in the Alignments section for a detailed description.
8. **Tuner.** Used to align the tuner. See "Tuner" in the Alignments section for a detailed description.
9. **White Tone.** Used to align the white tone. See "White Tone" in the Alignments section for a detailed description.
10. **Audio.** No audio alignment is necessary for this television set.
11. **NVM Editor.** Can be used to change the NVM data in the television set.
12. **SC NVM Editor. Can be used to edit Scaler NVM.**
13. **Test Pattern.** For future use.
14. **ComPalr.** Can be used to switch the television to "In System Programming" (ISP) mode, for software uploading via ComPair.
    Caution: When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.

How to navigate
- In SAM, select menu items with the CURSOR UP/DOWN keys on the remote control transmitter. The selected item will be highlighted. When not all menu items fit on the screen, use the CURSOR UP/DOWN keys to display the next / previous menu items.
- With the CURSOR LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- In SAM, when you press the MENU button twice, the set will switch to the normal user menus (with the SAM mode still active in the background). To return to the SAM menu press the MENU button again.
- When you press the MENU key in while in a submenu, you will return to the previous menu.

How to store SAM settings
To store the settings changed in SAM mode, leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

How to exit
Switch the set to STANDBY by pressing the POWER button on the remote control transmitter or on the television set.

5.2.3 Customer Service Mode (CSM)

Purpose
The Customer Service Mode shows error codes and information on the TV's operation settings. The call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps the call centre to diagnose problems and failures in the TV set before making a service call.
The CSM is a read-only mode; therefore, modifications are not possible in this mode.

How to enter
To enter CSM, press the following key sequence on the remote control transmitter: **"123654"** (do not allow the OSD display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:

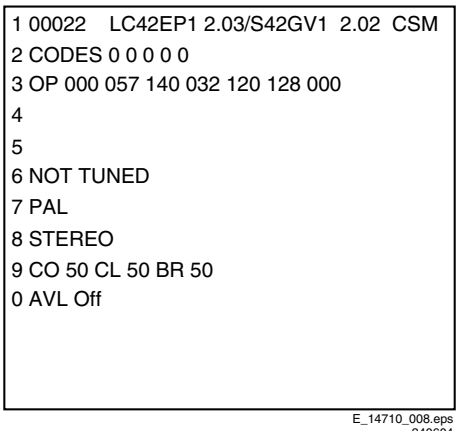


Figure 5-4 CSM menu (example from LC4.2E)

Menu explanation
1. Indication of the decimal value of the operation hours counter, Main/Scaler software version (see "Service Alignment Mode" for an explanation), and service mode (CSM= Customer Service Mode).
2. Displays the last five errors detected in the error code buffer.
3. Displays the option bytes.
4. Displays the type number version of the set (option).
5. Reserved.
6. Indicates the television is receiving an "IDENT" signal on the selected source. If no "IDENT" signal is detected, the display will read "NOT TUNED"
7. Displays the detected Colour system (e.g. PAL/NTSC).
8. Displays the detected Audio (e.g. stereo/mono).
9. Displays the picture setting information.
10. Displays the sound setting information.

How to exit
To exit CSM, use one of the following methods:
- Press the MENU, STATUS (or EXIT/INFO/[i+]), or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5.3 Problems and Solving Tips Related to CSM

5.3.1 Picture Problems

Note: The problems described below are all related to the TV settings. The procedures used to change the value (or status) of the different settings are described.

Picture too dark or too bright

If:
- The picture improves when you press the AUTO PICTURE button on the remote control transmitter, or
- The picture improves when you enter the Customer Service Mode,

Then:
1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the CURSOR UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the CURSOR LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the CURSOR UP/DOWN keys (if necessary) to select BRIGHTNESS.
6. Press the CURSOR LEFT/RIGHT keys to increase or decrease the BRIGHTNESS value.
7. Use the CURSOR UP/DOWN keys to select PICTURE.
8. Press the CURSOR LEFT/RIGHT keys to increase or decrease the PICTURE value.
9. Press the MENU button on the remote control transmitter twice to exit the user menu.
10. The new PERSONAL preference values are automatically stored.

White line around picture elements and text

If:
The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:
1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the CURSOR UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the CURSOR LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the CURSOR UP/DOWN keys to select SHARPNESS.
6. Press the CURSOR LEFT key to decrease the SHARPNESS value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Snowy picture
Check CSM line 6. If this line reads "Not Tuned", check the following:
- Antenna not connected. Connect the antenna.
- No antenna signal or bad antenna signal. Connect a proper antenna signal.
- The tuner is faulty (in this case line 2, the Error Buffer line, will contain error number 10). Check the tuner and replace/ repair the tuner if necessary.

Black and white picture

If:
- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:
1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the CURSOR UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the CURSOR LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the CURSOR UP/DOWN keys to select COLOUR.
6. Press the CURSOR RIGHT key to increase the COLOUR value.

7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Menu text not sharp enough

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the CURSOR UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the CURSOR LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the CURSOR UP/DOWN keys to select PICTURE.
6. Press the CURSOR LEFT key to decrease the PICTURE value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I^2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the Force/SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial (or RS232) cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector(s).

The ComPair fault finding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- Automatic (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I^2C/UART level. ComPair can access the I^2C/UART bus of the television. ComPair can send and receive I^2C/UART commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I^2C/UART buses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the fault finding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the fault finding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some **additional features** like:

- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and Force/SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Mono-carrier*.
  – Click on the “Panel” hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  – Click on the “Schematic” hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 How To Connect

This is described in the chassis fault finding database in ComPair.

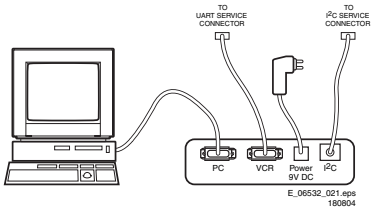


Figure 5-5 ComPair interface connection

5.4.4 How To Order

ComPair order codes (EU/AP/LATAM):

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excluding transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002), 3122 785 60110 (year 2003 onwards).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003), 3122 785 60130 (year 2004).
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer (non-UK): 4822 727 21632.
- Transformer UK: 4822 727 21633.
- ComPair interface cable: 3122 785 90004.
- ComPair interface extension cable: 3139 131 03791.
- ComPair UART interface cable: 3122 785 90630

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.

5.5.1 How To Read The Error Buffer

You can read the error buffer in 3 ways:
- On screen via the SAM (if you have a picture).
  Examples:
  - ERROR: 0 0 0 0 0: No errors detected
  - ERROR: 6 0 0 0 0: Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0: Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See “The Blinking LED Procedure”.
- Via ComPair.

5.5.2 How To Clear The Error Buffer

The error code buffer is cleared in the following cases:
- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: **“062596”** directly followed by the OSD/STATUS button (do not allow the OSD display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is highlighted. Use the CURSOR UP/DOWN buttons, if necessary.
  - Press the CURSOR RIGHT button to clear the error buffer. The text on the right side of the “CLEAR” line will change from “CLEAR?” to “CLEARED”
- If an error does not re-occur within 50 hours it is deleted from the error buffer.

5.5.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures that old error codes are no longer present.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-2 Error code overview

Error	Device	Error description	Check item	Diagram
0	Not applicable	-	-	-
1	Not applicable	-	-	-
2	Not applicable	-	-	-
3	Not applicable	-	-	-
4	GM1501 Scaler Flash-ROM	I^2C error while communicating with the Genesis Scaler and/or Flash-ROM is faulty/empty	7401 7530	A7 A11
5	Not applicable	+5V protection	7930	A6
6	I^2C bus	General I^2C error	7011, 3088, 3096	A2
7	Not applicable	-	-	-
8	M24C32	I^2C error while communicating with the Scaler EEPROM	7531	A11
9	M24C16	I^2C error while communicating with the EEPROM	7099	A2
10	Tuner	I^2C error while communicating with the PLL tuner	1302, 3302, 3303, 3327	A1
11	Not applicable	-	-	-
12	Not applicable	-	-	-
13	Not applicable	-	-	-
14	K4D263238M	Read-write error with the Scaler SDRAM	7501	A10
15	TDA9178T/N1	I^2C error while communicating with Histogram	7560	A3

5.6 The Blinking LED Procedure

Using this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful when there is no picture.

When the SDM is entered, the front LED will blink the contents of the error-buffer:
- The LED blinks with as many pulses as the error code number, followed by a time period of 1.5 seconds, in which the LED is “off”.
- Then this sequence starts is repeated.

Any RC5 command terminates this sequence.

Example of error buffer: **12 9 6 0 0**
After entering SDM, the following occurs:
- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again at 12 short blinks.

5.7 Fault Finding and Repair Tips

Notes:
- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.7.1 NVM Editor

In some cases, it can be handy if one directly can change the NVM contents. This can be done with the "NVM Editor" in SAM mode. With this option, single bytes can be changed.

Table 5-3 NVM editor overview

	Hex	Dec	Description
.ADR	0x000A	10	Existing value
.VAL	0x0000	0	New value
.Store	Store?		

5.7.2 Load default NVM values

In case a blank NVM is placed or when the NVM content is corrupted, default values can be downloaded into the NVM. After the default values are downloaded it will be possible to start up and to start aligning the TV set. This is no longer initiated automatically; to initiate the download the following action has to be performed:
1. Switch "off" the TV set via the AC Power switch.
2. Short circuit the SDM jumpers (keep short-circuited).
3. Press P+ or Ch+ on the local keyboard (and keep it pressed).
4. Switch on the TV set via the AC Power switch.
5. When the set has started, the P+/Ch+ button can be released and the short circuit of the SDM jumpers can be removed.
6. The red LED will be on continuously to indicate that the download is initiated (normally when SDM is activated the red LED will start with the Blinking LED sequence).
7. Wait +/- 30 s (time needed to download default values to the NVM).

5.7.3 Tuner and IF

No Picture in RF mode
1. Check whether picture is present in AV. If not, go to Video processing troubleshooting section.
2. If present, check that the Option settings are correct.
3. Check that all supply voltages are present.
4. Check if I^2C lines are working correctly (3.3V).
5. Manually store a known channel and check if there is IF output at Tuner pin 11.
6. Feed in 105 dBuV at Tuner pin 11 and check whether there is RGB output from Video Processing IC. If yes, Tuner may be defect. Replace Tuner.

Required system is not selected correctly
1. Check whether a Service jumper (#4022, 0805 size) is present. If yes, remove it.

5.7.4 Video Processing

No power
1. Check +12 V and 3V3 at position 1910.
2. If no supply, check the connector 1910.
3. If it is correct, check the power supply board.

Power supply is correct but no green LED
1. Check if connectors 1005 and 1601 are properly inserted.
2. If yes, check if the 3V3 is present.

No picture display
1. Check the RGB signal.
2. If it is present, check 3-IC7016 (NE555).
3. If it has output, the problem is in SCALER part.
4. Otherwise, check H-out on pin 2 of NE555. If the input signal of pin 2 is present, but no output, the IC is defect.

Note:
- If the H-out (pin 67) doesn't have signal or the level is low, check the output of NE555 (pin 3) during start up.
- If the H-out (pin 67) has a signal (or has a signal for a very short time), change IC7016 (NE555).

No TV but PC is present
1. Check if HSYNC and VSYNC are present at pin 3 of 7017 and 7015.
2. If they are present, check RGB output.
3. If there is no RGB output, the IC TDA120xx can be defect.

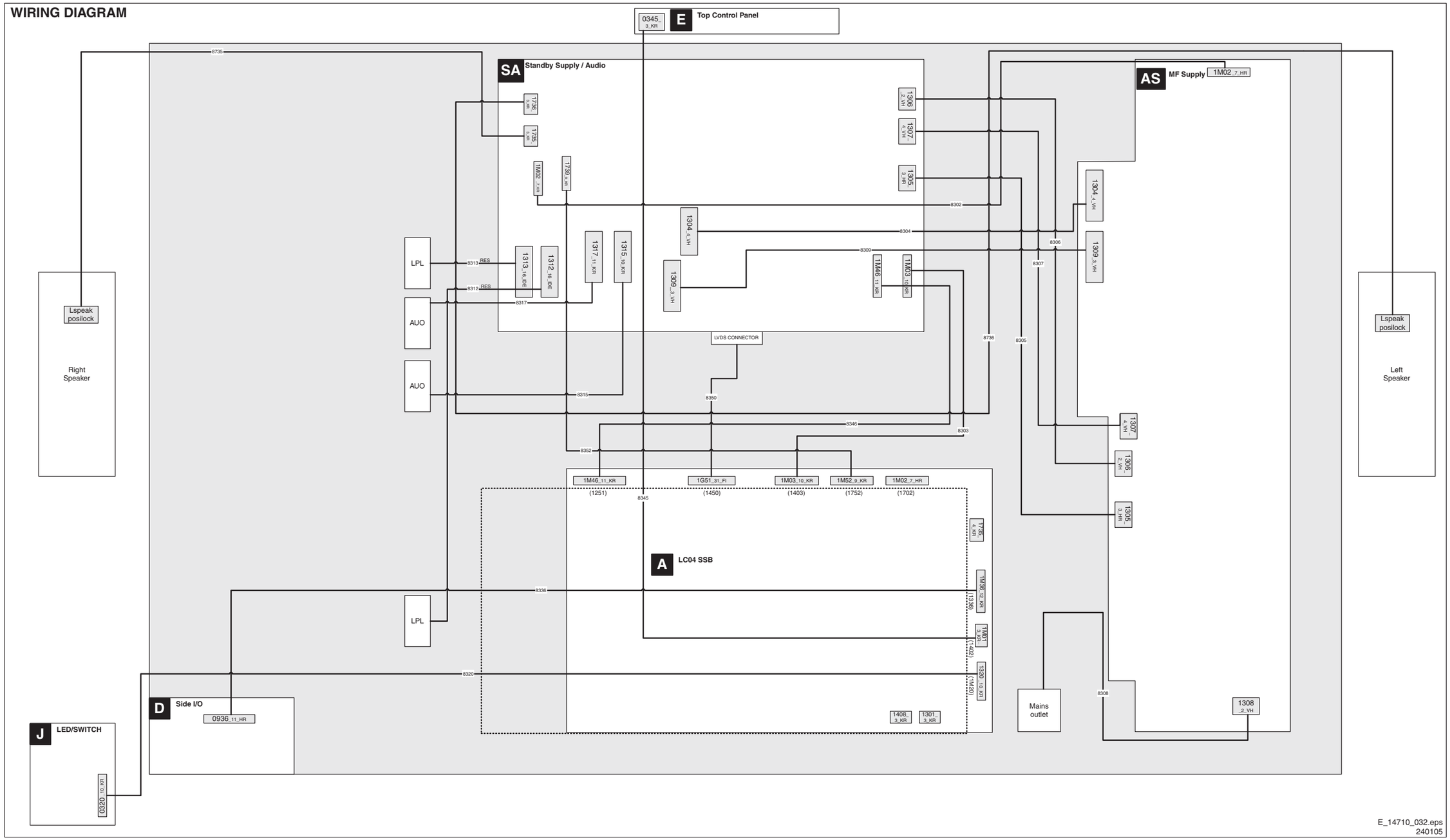
5.7.5 Power Supply

This power supply contains two fuses. One is near the AC Power (or mains) inlet connector 1308 and the other is near connector 1307.

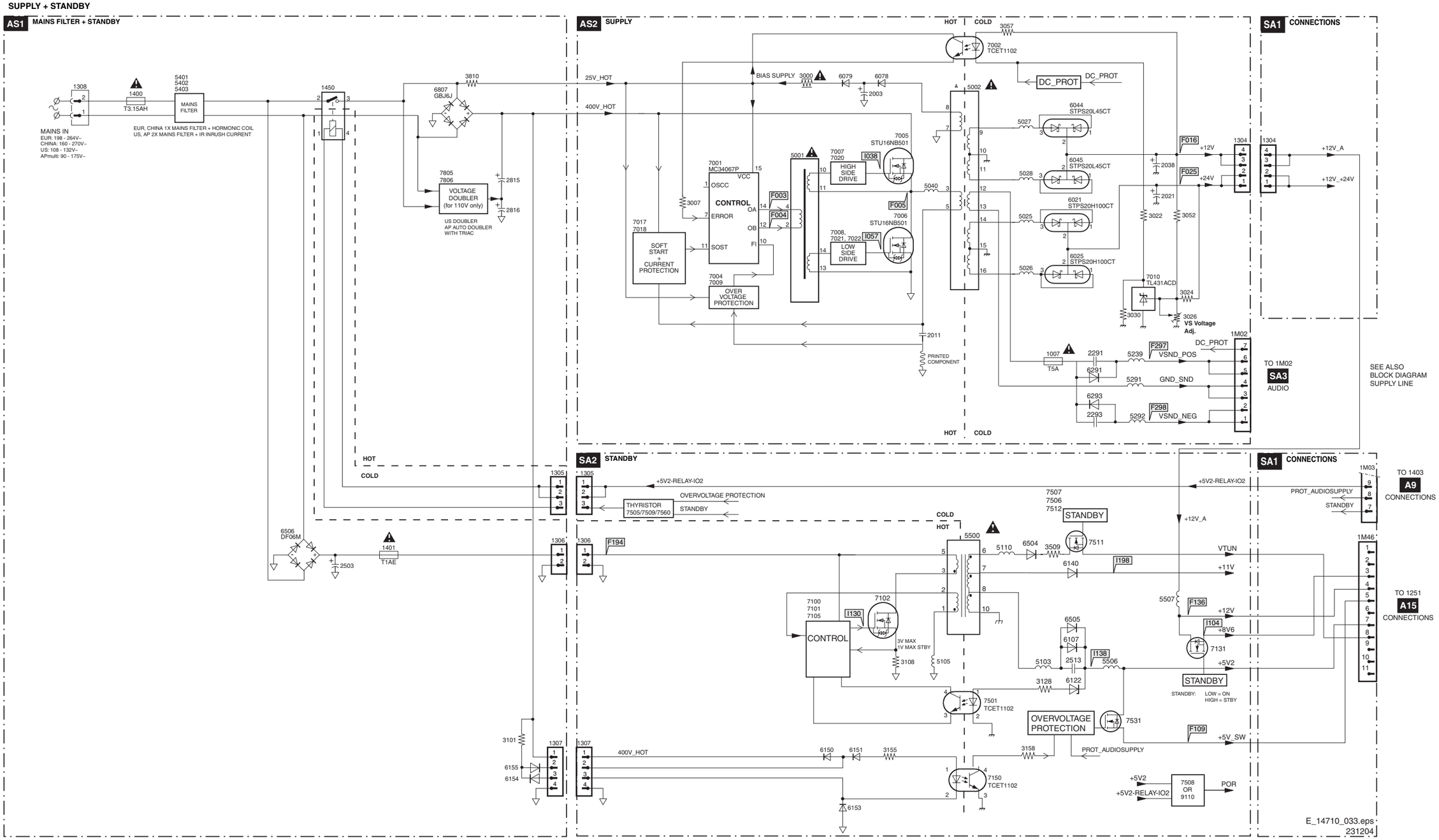
1. Check with power supply in "off" state by means of ohmic measurement.
2. Fuse 1400 may open in case of severe lightning strikes and/or failures in the power supply.
3. Fuses 1401 may open in case of a problem with the Stand-by Supply. Replacement of the fuse is needed, but not before the cause of the overload conditions is resolved.

6. Block Diagrams, Testpoint Overviews, and Waveforms

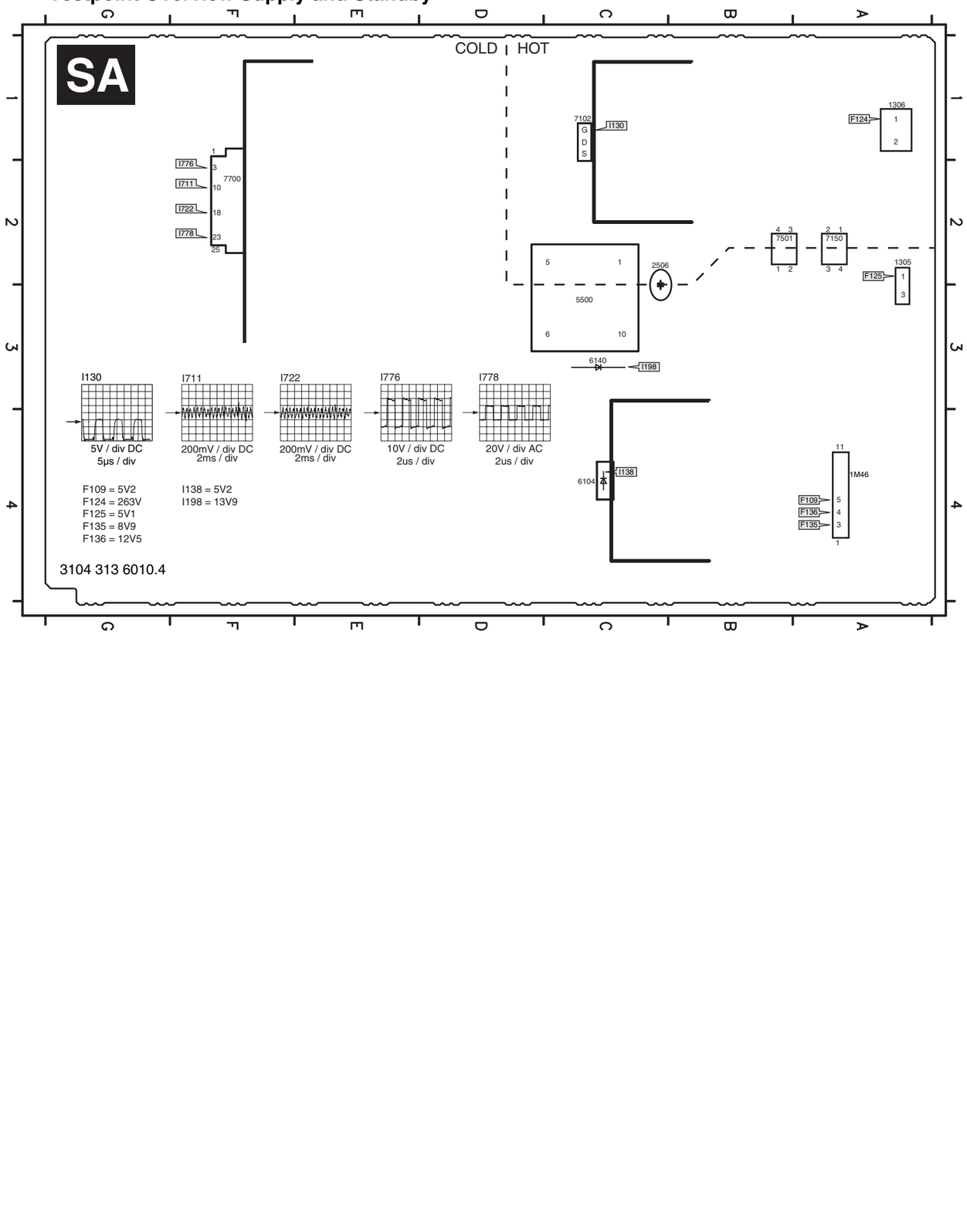
Wiring Diagram

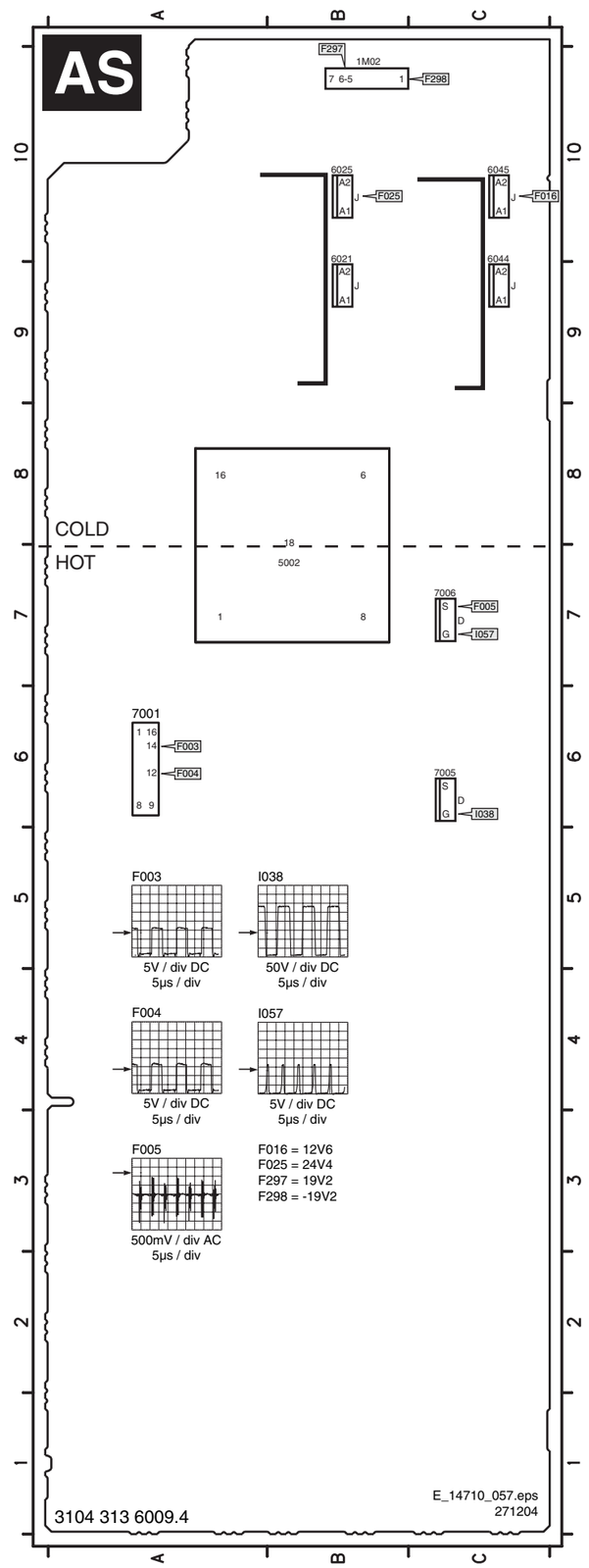


Block Diagram Supply and Standby

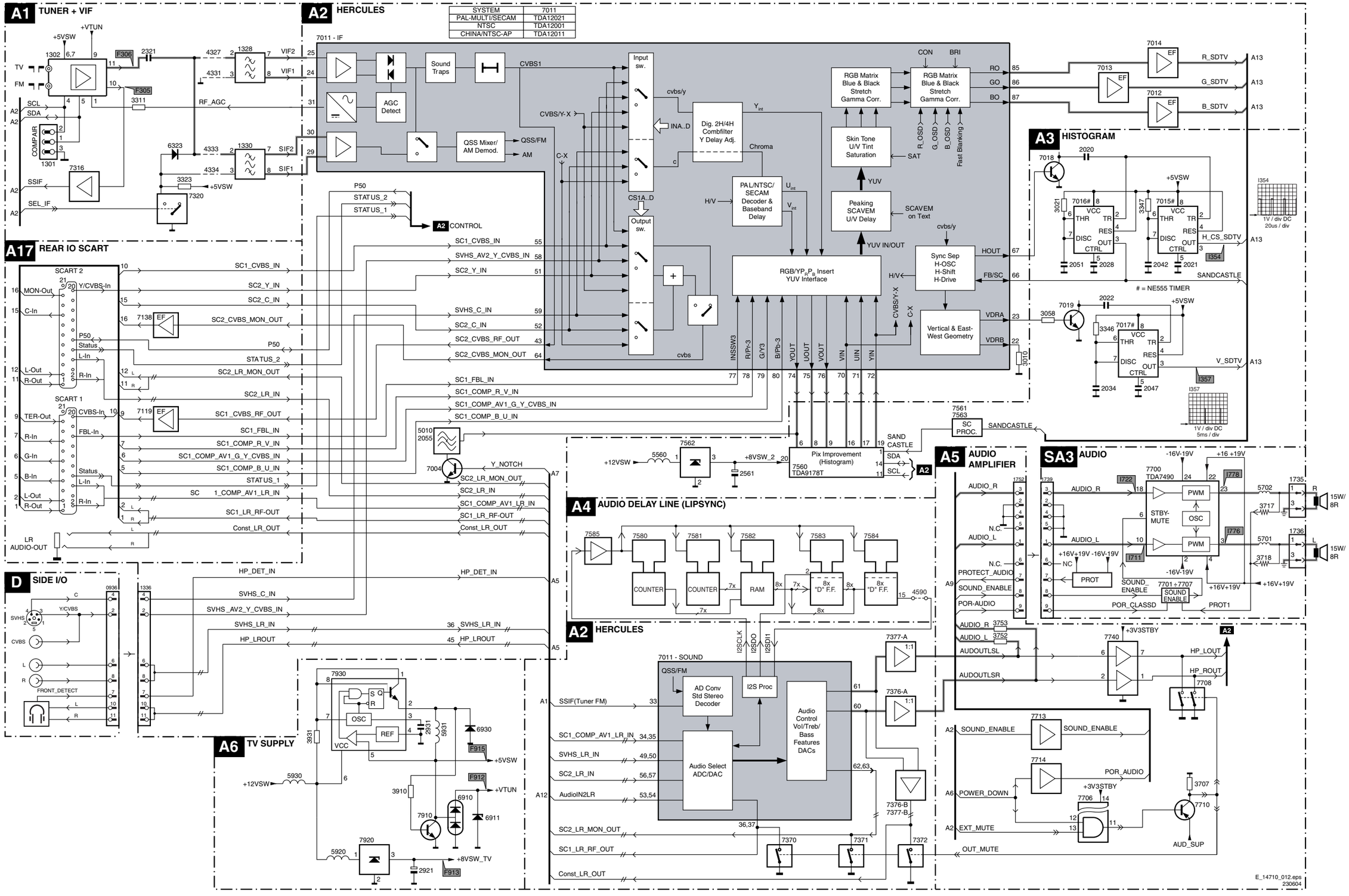


Testpoint Overview Supply and Standby

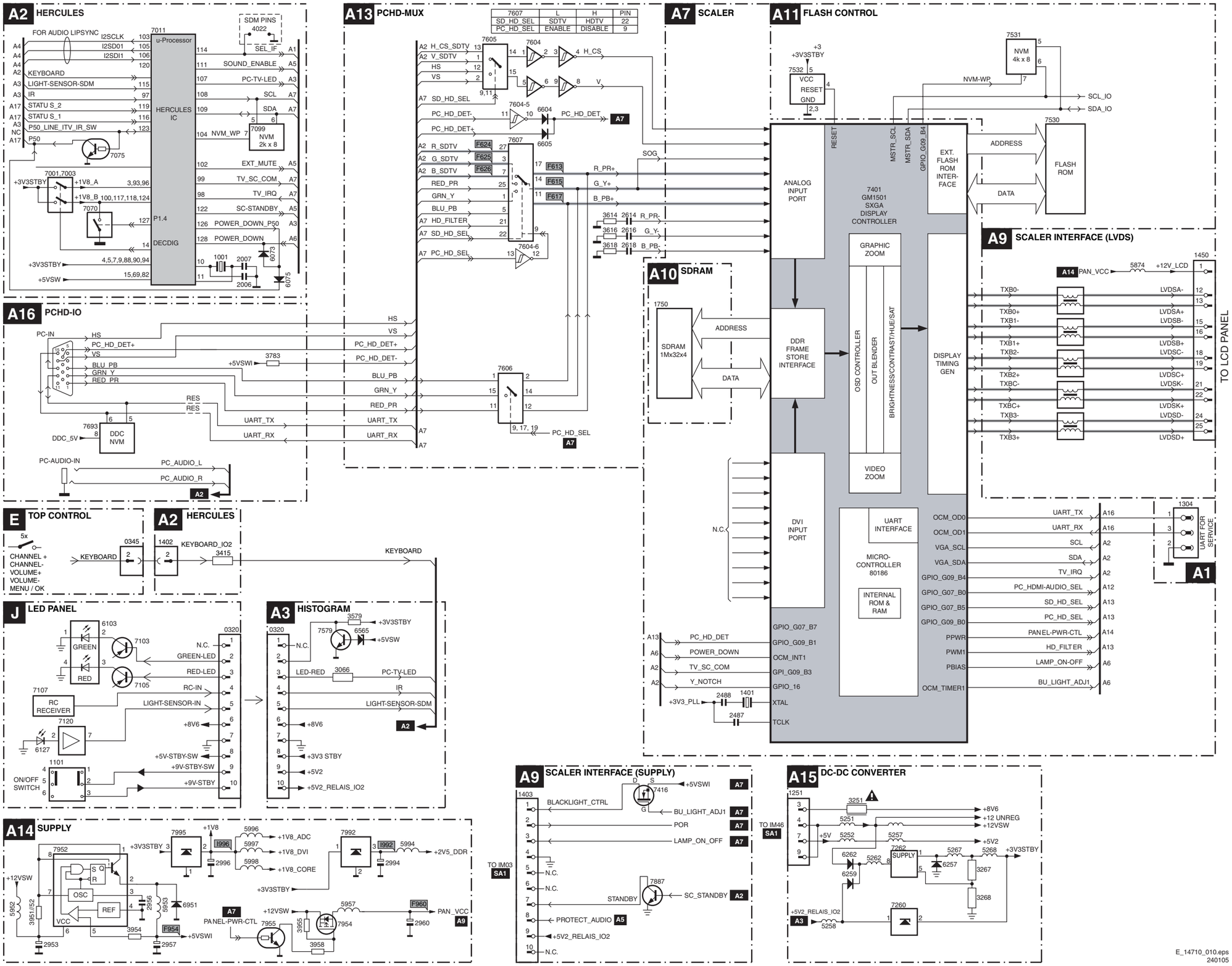




Block Diagram Audio and Video



Block Diagram Audio and Video



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Testpoint Overview SSB (Top Side)

F002	B2	F014	C3	F029	C3	F041	B3	F053	C3	F075	B3	F090	C3	F104	D5	F110	D5	F120	D4	F134	D5	F148	D6	F159	D5	F255	A7	F307	C2	F401	C5	F413	B7	F434	A5
F003	D2	F018	C3	F030	C3	F042	C4	F058	C4	F076	B3	F093	C2	F104	D5	F110	D5	F120	D4	F134	D5	F148	D6	F159	D5	F257	A7	F308	D1	F402	A5	F414	B7	F436	A5
F004	B4	F019	B4	F031	C3	F043	C3	F060	B4	F077	B1	F094	C3	F105	D3	F111	D3	F121	D4	F135	D5	F153	D6	F160	D5	F258	A6	F309	B3	F403	A5	F415	B7	F437	A5
F005	C4	F020	C3	F032	C3	F044	B4	F061	C4	F078	B1	F095	C4	F105	D3	F111	D3	F121	D4	F135	D5	F153	D6	F160	D5	F259	A4	F310	C3	F404	A5	F416	B7	F447	B5
F006	C4	F021	B4	F033	C4	F045	C4	F062	C4	F079	B1	F096	C4	F106	D3	F113	D3	F127	D4	F137	D5	F154	D5	F161	D3	F260	B7	F311	C2	F405	A5	F417	B5	F451	B5
F007	B3	F022	B3	F034	C3	F046	C3	F063	C4	F080	B1	F099	A3	F106	D3	F113	D3	F127	D4	F137	D5	F154	D5	F161	D3	F300	B2	F313	D2	F406	A5	F418	B7	F461	B6
F008	B3	F023	B3	F035	C3	F047	C3	F067	C4	F081	B1	F101	D3	F107	D2	F115	D3	F128	D4	F141	D5	F156	D6	F191	D5	F301	C3	F314	D2	F407	A5	F419	A6	F463	B5
F009	B3	F024	B1	F036	C3	F048	B1	F068	C4	F082	C1	F101	D3	F107	D2	F115	D3	F128	D4	F141	D5	F156	D6	F191	D5	F302	D2	F315	D2	F408	A5	F420	C1	F465	C5
F010	B2	F025	B1	F037	A2	F049	C3	F069	C4	F083	B1	F102	D4	F108	D5	F117	D4	F129	D5	F143	D6	F157	D5	F251	A7	F303	D2	F316	C2	F409	A5	F421	C1	F466	C5
F011	B2	F026	C1	F038	C3	F050	C4	F071	B4	F087	B3	F102	D4	F108	D5	F117	D4	F129	D5	F143	D6	F157	D5	F252	A7	F305	C2	F316	C2	F410	A5	F422	B4	F470	B5
F012	B3	F027	B1	F039	B2	F051	C3	F072	B1	F088	B3	F103	D3	F109	D3	F119	D4	F133	D4	F147	D6	F158	D5	F253	A7	F306	C2	F318	C3	F411	B7	F423	B4	F478	B6
F013	C3	F028	C3	F040	C3	F052	C3	F073	A4	F089	B2	F103	D3	F109	D3	F119	D4	F133	D4	F147	D6	F158	D5	F254	A7	F306	C2	F319	B2	F412	B7	F424	B4	F482	A5

F486	B5	F540	A5	F605	C5	F626	C4	F685	D7	F702	A2	F718	B2	F801	C6	F821	C7	I112	D3	I456	B5	I827	C6
F501	B7	F541	A5	F606	C5	F680	D7	F686	D7	F705	A1	F719	B2	F802	C7	F822	C6	I114	D3	I457	A5	I828	C6
F530	A4	F580	A3	F607	C5	F680	D7	F686	D7	F706	A1	F720	B2	F803	C6	F823	C6	I114	D3	I458	A5	I834	C6
F531	B5	F584	B3	F608	C5	F681	D7	F687	D7	F707	A1	F721	A1	F804	C7	F824	C7	I116	D4	I459	B5	I836	C6
F532	B5	F585	A3	F612	C5	F681	D7	F687	D7	F708	A1	F722	A2	F805	C6	F826	B6	I116	D4	I460	A5	I838	C6
F533	B5	F586	A3	F613	C5	F682	D7	F688	D7	F710	C3	F723	A2	F806	B5	F827	C6	I118	D4	I502	A7	I840	C6
F534	B4	F587	B3	F614	C5	F682	D7	F688	D7	F711	A1	F724	A2	F807	B5	F870	A5	I118	D4	I503	B7	I841	C6
F535	B5	F588	B3	F615	C5	F683	D7	F689	D7	F712	A1	F725	A2	F808	C6	F871	A5	I119	D4	I607	C5	I842	C6
F536	A5	F590	A3	F616	C5	F683	D7	F689	D7	F713	A1	F726	A3	F809	C7	F872	A6	I119	D4	I608	C5	I844	B6
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																I016	B4	I254	A7	I639	C5	I907	A3
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																I025	C3	I261	A7	I684	C6	I956	A5
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																I028	C3	I263	A7	I690	D6	I959	A6
																I030	B3	I264	A7	I690	D6	I960	A6
																I032	C3	I304	D1	I699	D6	I961	A5
																I033	C3	I313	C2	I699	D6	I962	A6
																I034	C3	I317	C3	I700	D6	I963	A5
																I036	B4	I318	C2	I700	D6	I964	A6
																I037	C3	I319	C2	I701	C2	I992	A7
																I039	B4	I320	C2	I701	D6	I995	B6
																I042	B4	I321	C2	I702	B2	I996	B7
																I044	B4	I322	C2	I702	D6		
																I051	C4	I324	C2	I703	A2		
																I052	C4	I325	C2	I704	B2		
																I054	B4	I348	A3	I705	B2		
																I055	C4	I349	A3	I706	B2		
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																I060	B2	I354	A3	I712	A2		
																I061	B4	I355	A3	I713	B2		
																I063	C3	I356	A4	I714	C2		
																I064	B3	I357	A4	I715	C2		
																I065	B3	I358	A4	I716	C2		
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																I069	C4	I361	A3	I719	A2		
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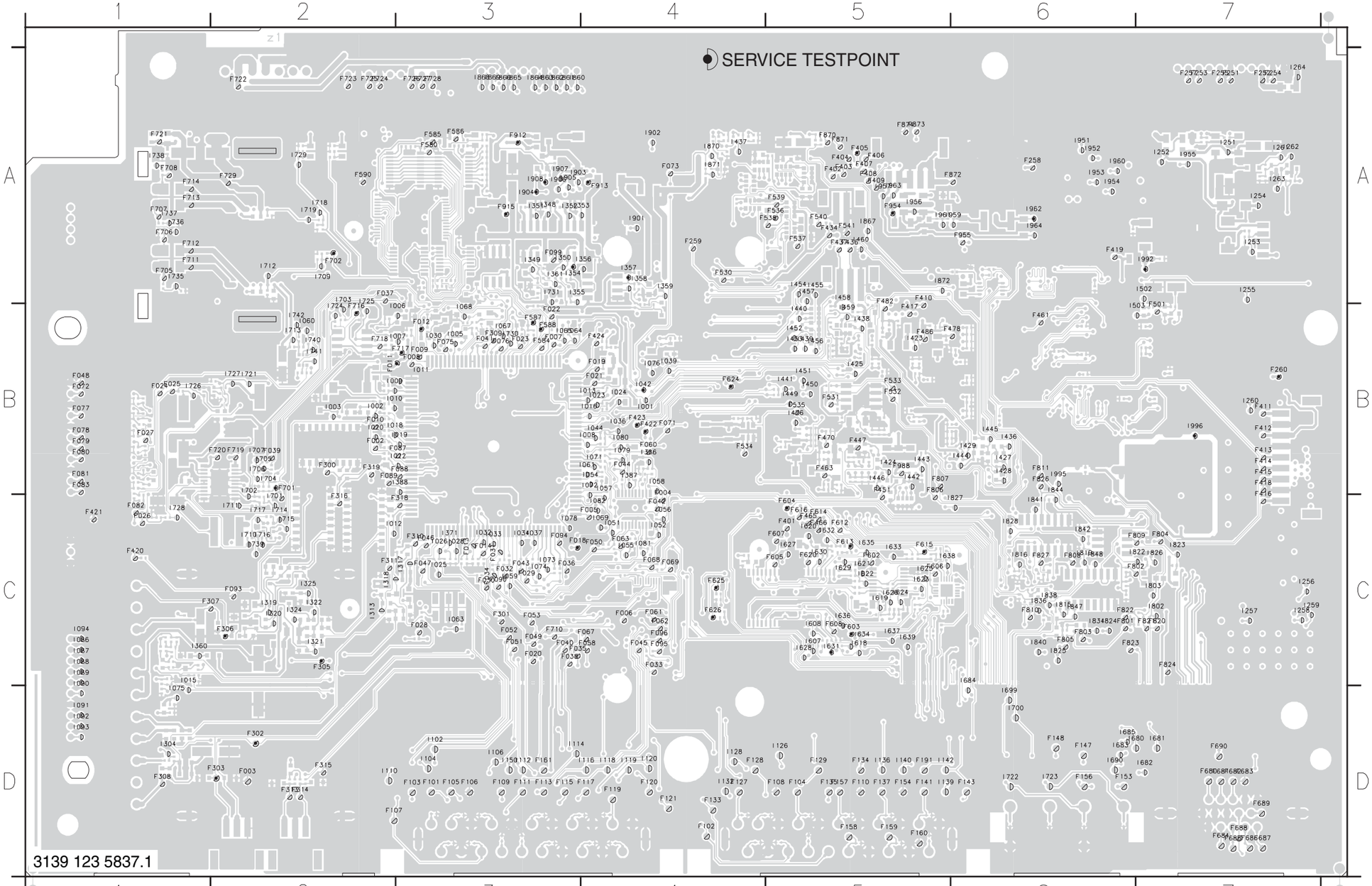
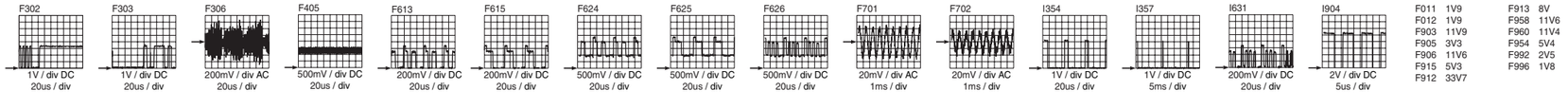
																I073	C3	I387	B4	I723	D6		
																I074	C3	I388	B3	I724	B2		
																I075	D1	I423	B5	I725	A2		
																I076	B4	I424	B5	I726	B1		
																I078	C3	I425	B5	I727	B2		
																I079	B4	I426	B5	I728	C1		
																I080	B4	I427	B6	I729	A2		
																I081	C4	I428	B6	I730	B3		
																I082	C4	I429	B6	I731	A3		
																I086	C1	I436	B6	I735	A1		
																I087	C1	I437	A4	I736	A1		
																I088	C1	I438	B5	I737	A1		
																I089	C1	I439	B5	I738	A1		
																I090	C1	I440	B5	I739	C2		
																I091	D1	I441	B5	I740	B2		
																I092	D1	I442	B5	I741	B2		
																I093	D1	I443	B5	I742	B2		
																I094	C1	I444	B6	I802	C7		
																I102	D3	I445	B6	I803	C7		
																I102	D3	I446	B5	I815	C6		
																I104	D3	I449	B5	I816	C6		
																I104	D3	I450	B5	I819	C6		
																I106	D3	I451	B5	I822	C7		
																I106	D3	I452	B5	I823	C7		
																I110	D2	I453	B5	I824	C6		
																I110	D2	I454	A5	I825	C6		
																I112	D3	I455	A5	I826	C7		





F011	1V9	F012	1V9	F903	11V9	F905	3V3	F906	11V6	F915	5V3	F912	33V7	F913	8V	F958	11V6	F960	11V4	F954	5V4	F992	2V5	F996	1V8										

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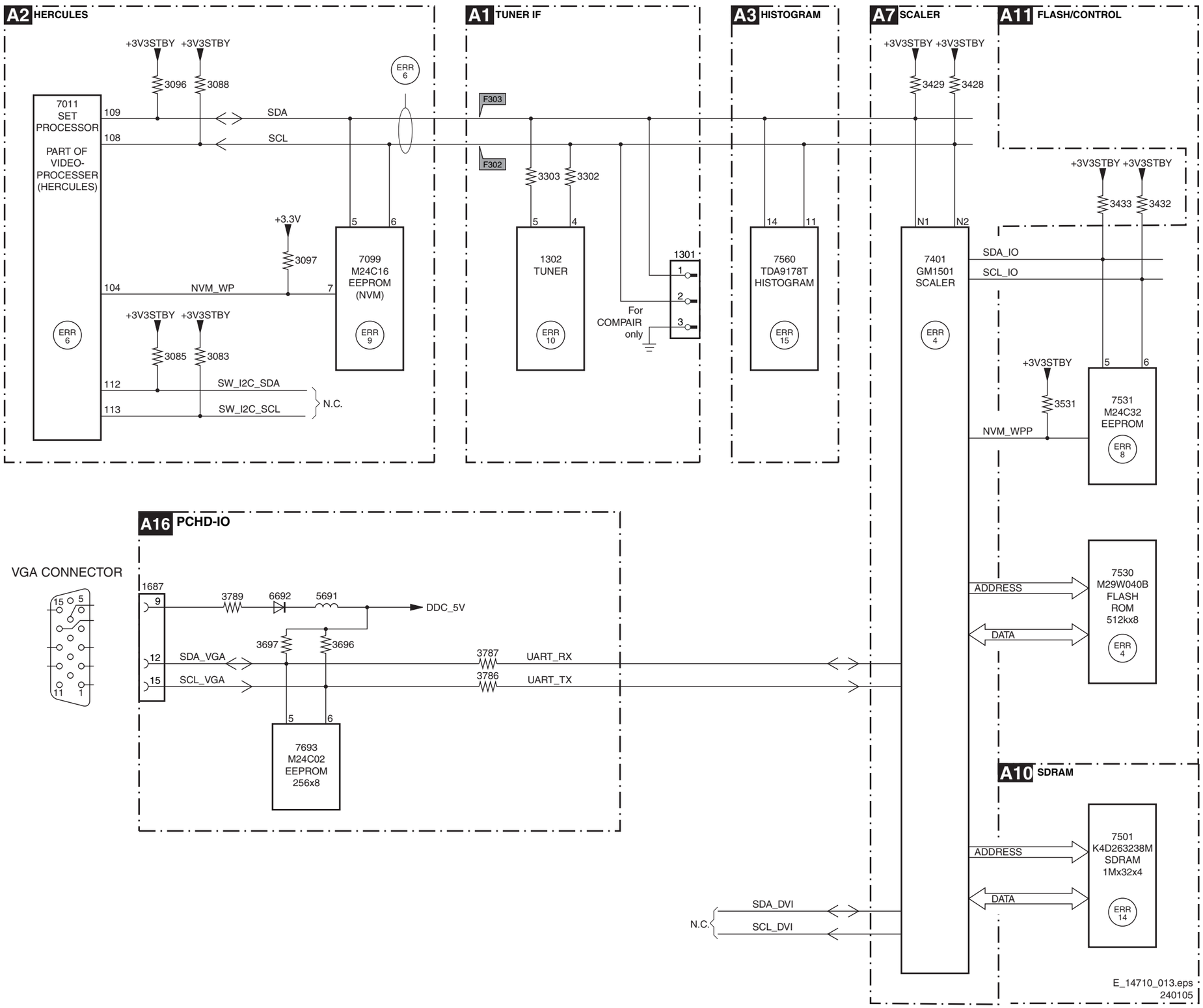
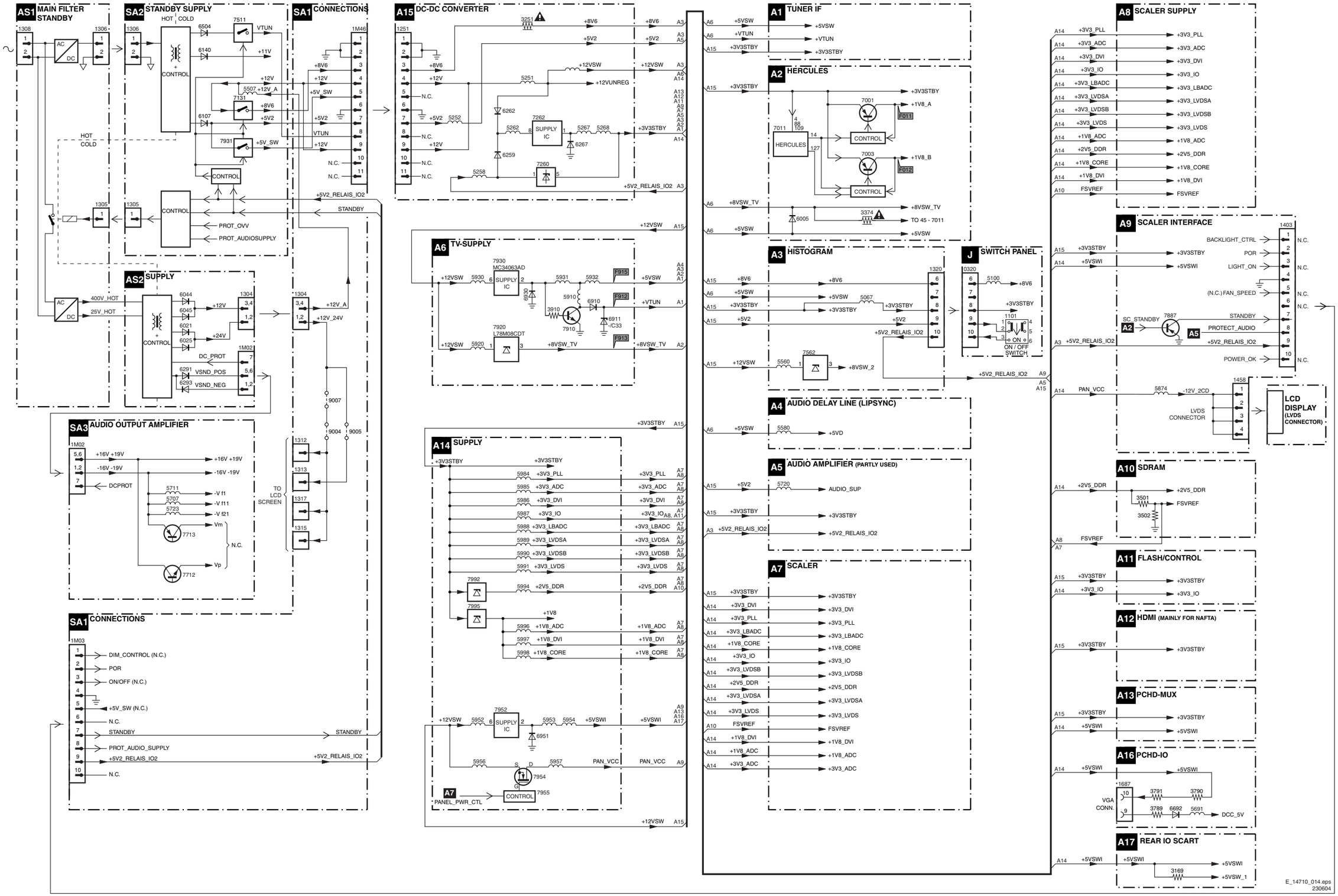
I2C IC Overview

I2C BUS INTERCONNECTION DIAGRAM

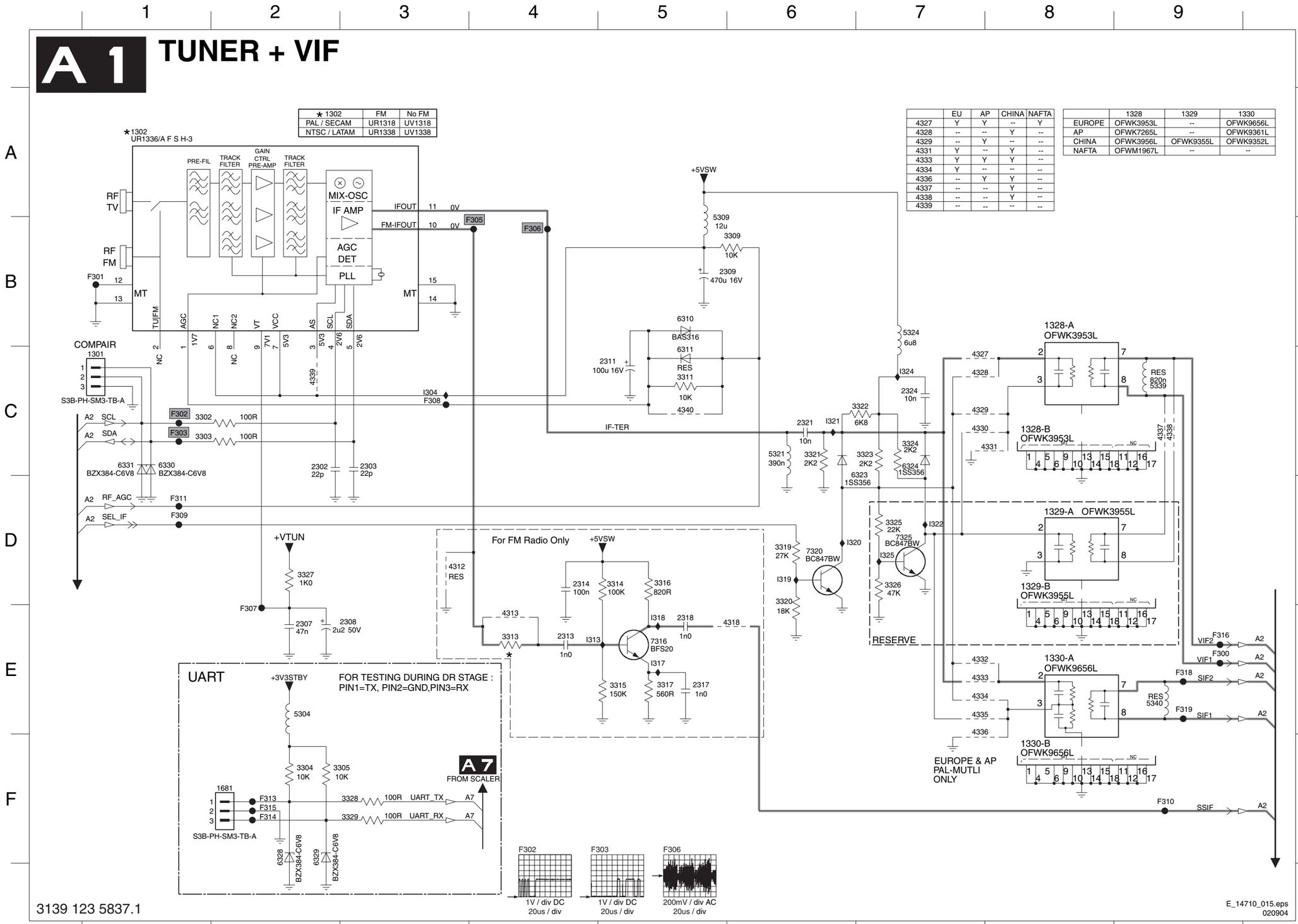


Supply Voltage Overview



7. Circuit Diagrams and PWB Layouts

SSB: Tuner and VIF



★ 1302	FM	No FM
PAL / SECAM	UR1318	UV1318
NTSC / LATAM	UR1338	UV1338

	EU	AP	CHINA	NAFTA
4327	Y	Y	--	Y
4328	--	--	Y	--
4329	--	Y	--	--
4331	Y	--	Y	--
4333	Y	Y	Y	--
4334	Y	--	--	--
4336	--	Y	Y	--
4337	--	--	Y	--
4338	--	--	Y	--
4339	--	--	--	--

	1328	1329	1330
EUROPE	OFWK3953L	--	OFWK9656L
AP	OFWK7265L	--	OFWK9361L
CHINA	OFWK3956L	OFWK9355L	OFWK9352L
NAFTA	OFWM1967L	--	--

SSB: Histogram and Hercules

A2 HISTOGRAM & HERCULES

AUDIO PROCESSING

*	HETV (15W)	MTV (5W)
3380	5K6	10K
3381	5K6	10K
3382	5K6	10K
3383	5K6	10K

Item	No 3D	3D
4004	-	Yes
4005	Yes	-
4006	-	Yes
4007	Yes	-
4002	Yes	-
3009	Yes	-
2083	-	Yes

DMMI - IFH YPbPr {RES}

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1001 D4	3050 C11	F022 A12
1004 I12	3051 C11	F023 B6
1009 H4	3052 C14	F024 J2
1036 H1	3053 F5	F025 K2
1336 H1	3054 E10	F026 J2
1402 B1	3055 I16	F027 I2
2000 E2	3056 B1	F028 J4
2001 E3	3057 B9	F029 J4
2002 F10	3059 E4	F030 I4
2004 C6	3060 F5	F031 I4
2005 D5	3064 J11	F032 I4
2006 D4	3065 F5	F033 B6
2007 D4	3067 G2	F034 I4
2008 E4	3068 H2	F035 I4
2009 E4	3069 H2	F036 I4
2010 E4	3070 B2	F037 J4
2011 E5	3071 J11	F038 K4
2012 F3	3072 I2	F039 J4
2013 H7	3073 C4	F040 K4
2014 H8	3074 H5	F041 B6
2015 H8	3075 B4	F042 K4
2016 H8	3077 B4	F043 I4
2017 H8	3078 B4	F044 K4
2018 H8	3079 B5	F045 K4
2025 F10	3080 A6	F046 G4
2024 F2	3081 B6	F047 G4
2025 E10	3082 B7	F048 J2
2026 E10	3083 B7	F049 H4
2027 E10	3084 C7	F050 K4
2029 E10	3085 B7	F051 G4
2030 E10	3086 B8	F052 B1
2031 E10	3087 B8	F053 G4
2032 E10	3088 B8	F072 G2
2033 E11	3089 D2	F077 H2
2035 D11	3091 C10	F078 H2
2036 H3	3092 B10	F079 I2
2037 I3	3093 B11	F080 I2
2040 C14	3094 C9	F081 J2
2041 D10	3096 B8	F082 J2
2043 E4	3097 A12	F083 J2
2044 D10	3098 F13	F087 E5
2052 D10	3357 C4	F088 E6
2053 J11	3358 H7	F089 E6
2054 C3	3359 G7	F090 I12
2055 F12	3360 H16	F093 I12
2056 F12	3361 H16	F094 J12
2059 G2	3362 H16	F095 J12
2060 E4	3363 I16	F096 J12
2061 E4	3364 I16	F099 B13
2063 F5	3365 I16	F420 B2
2064 E2	3366 I14	F421 B2
2065 G4	3367 I14	F422 B14
2066 H5	3368 J14	F423 B14
2068 D5	3369 J14	F424 F15
2069 G2	3370 F6	I001 A6
2070 B3	3371 G4	I002 E5
2071 D5	3372 G4	I003 D1
2072 B5	3373 J14	I005 B5
2073 B6	3374 H6	I006 C2
2074 C6	3378 H12	I007 C3
2076 C9	3380 G10	I008 E9
2077 C10	3381 G11	I009 D6
2078 B11	3382 H10	I010 D6
2079 H2	3383 H11	I011 D6
2080 H2	3386 G12	I012 F6
2081 H2	3389 C9	I013 D9
2082 F6	3390 H8	I015 C7
2083 G7	3391 H8	I016 B11
2084 D9	3392 H9	I018 E5
2087 H2	3393 H9	I019 E5
2088 I2	3394 C5	I020 E6
2090 I2	3415 B3	I022 E6
2091 I2	4002 G7	I023 D10
2092 I2	4004 H9	I024 D10
2093 J2	4005 H9	I025 G6
2094 J2	4006 H9	I026 G6
2095 K2	4007 H9	I028 G7
2096 K2	4008 C10	I030 C7
2097 J2	4022 B7	I032 F7
2098 J2	4023 H2	I033 F7
2099 A11	4062 E5	I034 F8
2355 G7	4085 H3	I036 D10
2356 G6	4086 I3	I037 F8
2357 G6	4360 J13	I039 B10
2358 G6	4361 J13	I042 C11
2359 F5	4362 J13	I044 D11
2360 I14	4363 J13	I051 E11
2361 J16	5001 C6	I052 I15
2362 J14	5002 C6	I054 E10
2364 J16	5003 E3	I055 I16
2365 J16	5004 H7	I056 I14
2366 J16	5005 F10	I057 F10
2367 I14	5006 D11	I058 I16
2368 K14	5007 C10	I059 I12
2370 G5	5008 C10	I060 J12
2371 G5	5010 F12	I061 E10
2372 G5	5060 C5	I063 H6
2373 G6	5070 A5	I064 C10
2374 G6	5071 C6	I065 C9
2375 G6	5072 B9	I073 G10
2376 G12	5360 I14	I074 H10
2377 H12	5370 C9	I079 H13
2378 D9	5371 C9	I080 H13
2380 D10	5372 C10	I081 I13
2381 D10	6001 C3	I371 F7
2382 D5	6005 H7	I386 J16
2386 H11	6073 C2	I387 J16
2387 G5	6074 C2	I388 F5
2388 G5	6075 C2	
2392 G11	6076 C2	
2394 C10	7001 F2	
2395 H6	7002-1 F2	
2396 H6	7002-2 F1	
2397 G9	7003 E1	
2398 G9	7004 F13	
3000 D2	7005 C1	
3001 E3	7011 E7	
3002 E2	7012 B14	
3003 E2	7013 B15	
3004 E1	7014 C15	
3005 D2	7070 C2	
3006 D5	7075 B2	
3007 E4	7099 B12	
3008 F4	7360 I15	
3009 G8	7370-1 J4	
3010 F5	7370-2 J5	
3011 E11	7371-1 J5	
3012 H16	7371-2 J6	
3013 I8	7372-1 J6	
3014 D14	7372-2 J7	
3015 C15	7376-A H10	
3016 D15	7376-B H11	
3017 C15	7377-A G10	
3018 D15	7377-B G11	
3019 B14	F002 E6	
3023 I2	F003 D6	
3024 J2	F004 D5	
3025 J2	F005 F9	
3027 J2	F006 B5	
3028 F9	F007 B5	
3031 H16	F008 C5	
3033 H16	F009 C3	
3034 I16	F010 E5	
3035 E10	F011 F3	
3036 I16	F012 F3	
3037 I2	F013 H6	
3038 H2	F014 H7	
3040 F12	F019 D9	
3048 D11	F020 D10	
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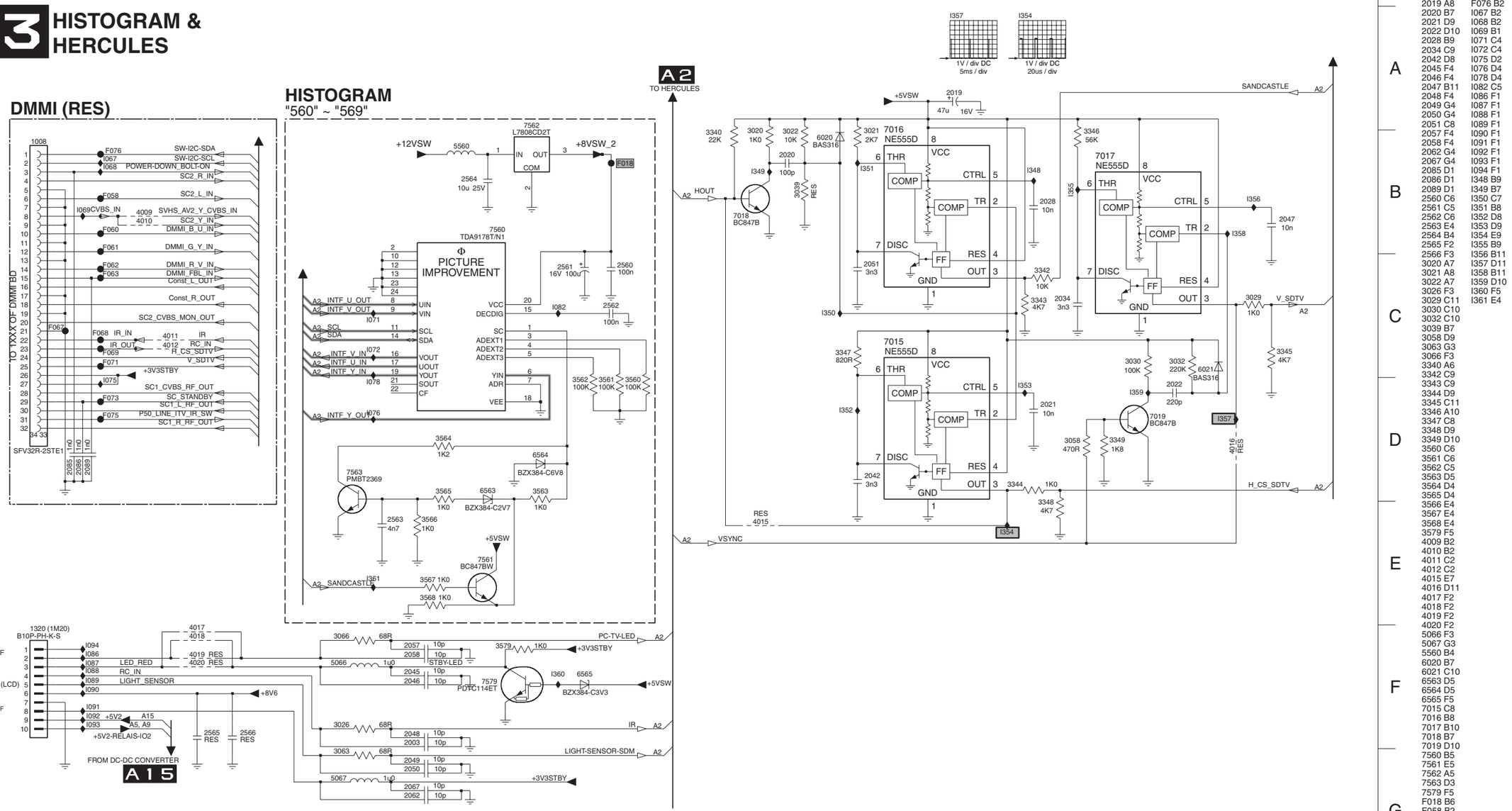
SSB: Histogram and Hercules

A3 HISTOGRAM & HERCULES

DMMI (RES)

HISTOGRAM
"560" ~ "569"



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2003 F4
2019 A8
2020 B7
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2028 B9
2034 C9
2042 D8
2045 F4
2046 F4
2047 B11
2048 F4
2049 G4
2050 G4
2051 C8
2057 F4
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2086 D1
2089 D1
2560 C6
2561 C5
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3020 A7
3021 A8
3022 A7
3026 F3
3029 C11
3030 C10
3032 C10
3039 B7
3058 D9
3063 G3
3066 F3
3340 A6
3342 C9
3343 C9
3344 D9
3345 C11
3346 A10
3347 C8
3348 D9
3349 D10
3560 C6
3561 C6
3562 C5
3563 D5
3564 D4
3565 D4
3566 E4
3567 E4
3568 E4
3579 F5
4009 B2
4010 B2
4011 C2
4012 C2
4015 E7
4016 D11
4017 F2
4018 F2
4019 F2
4020 F2
5066 F3
5067 G3
5560 B4
6020 B7
6021 C10
6563 D5
6564 D5
6565 F5
7015 C8
7016 B8
7017 B10
7018 B7
7019 D10
7560 B5
7561 E5
7562 A5
7563 D3
7579 F5
F018 B6
F058 B2
F060 B2
F061 B2
F062 C2
F063 C2
F067 C1
F068 C1
F069 C2
F071 C2
F073 D2
F075 D2
F076 B2
I067 B2
I068 B2
I069 B1
I071 C4
I072 C4
I075 D2
I076 D4
I078 D4
I082 C5
I086 F1
I087 F1
I088 F1
I089 F1
I090 F1
I091 F1
I092 F1
I093 F1
I094 F1
I348 B9
I349 B7
I350 C7
I351 B8
I352 D8
I353 D9
I354 E9
I355 B9
I356 B11
I357 D11
I358 B11
I359 D10
I360 F5
I361 E4

SSB: Audio Delay line (Lip sync)

A4 AUDIO DELAY LINE (Lip sync)

2580 B1
2581 D1
2582 B2
2583 B7
2584 B8
2585 F6
2586 F6
2587 D9
2588 D9
3580 F5
3581 F6
4580 F2
4581 F2
4582 F2
4583 F2
4584 F2
4585 F2
4586 C9
4587 C9
4588 C9
4589 C9
4590 C9
4591 C9
4592 C9
4593 D9
5580 A1
7580 B1
7581 F1
7582 B2
7583 C6
7584 C8
7585 F6
F580 A1
F584 F9
F585 F5
F586 F6
F587 D9
F588 D9
F590 B2

+5VSW 5580 1u0 F580 +5VD

COUNTER
7580
M74HC590T
+5VD 2580 100n
VCC 16
EN3 14
C2 13
2V3
G1 CTR8 12
1+ (CT=255)Z4 11 2V3
CT=0 10 5V3
4 9 5V3
2D 3▽ 15
1 2V6
2 2V6
3 2V6
4 2V6
5 2V6
6 2V6
7 2V6
GND 8

+5VD 2582 100n F590
7582
CY62256LL-70ZC
RAM 32kx8
28 5V3
A 0 32k-1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
8 2EN
22 27 20 2C1 G2
11 12 13 15 16 17 18 19 2V5
A 1D 2V3
14
21 23 24 25 26 1 2 3 4 5 6 7 8 9 10

DFF
7583
74HC573PW
+5VD 2583 100n
5V3 20
1 11 2V3
EN C1
2 2V6
1D
3 4 5 6 7 8 9
19 18 17 16 15 14 13 12
10

DFF
7584
74HC573PW
+5VD 2584 100n
5V3 20
1 11 2V3
EN C1
2 3 4 5 6 7 8 9
1D
19 18 17 16 15 14 13 12
10
4586 (1)
4587 (1)
4588 (1)
4589 (1)
4590
4591 (1)
4592 (1)
4593 (1)
(1) NOT USED
F587 2V6
I2SDI1 A2
2587 330p
F588
I2SDO1 A2
2588 470p

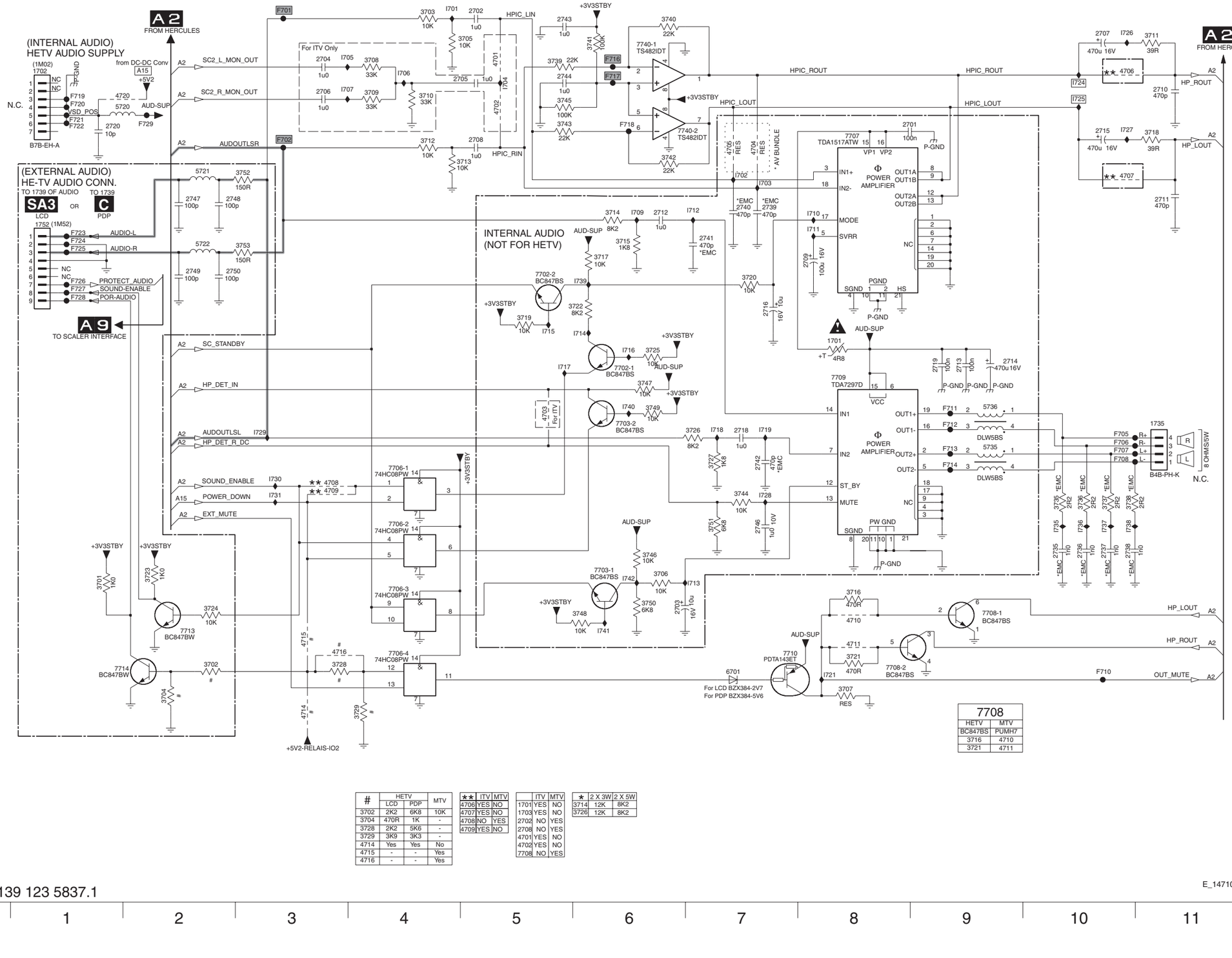
+5VD 2581 100n
VCC 16
EN3 14
C2 13
5V3
G1 CTR8 12 5V3
1+ (CT=255)Z4 11 2V3 +5VD
CT=0 10 5V3
4 9
2D 3▽ 15
1 2V6
2 2V6
3 2V6
4 4580 2V6
5 4581 2V6
6 4582 (1) 2V6
7
GND 8
7581
M74HC590T
COUNTER
4583 (1)
4584 (1)
4585 (1)
(1) NOT USED

+5VD
3580
470R
F585 2V3
7585
BC847BW
0V2
F586
2586
82p
3581
47K
2585
82p
F584 I2SCLK A2

3139 123 5837.1
E_14710_018.eps
210105

SSB: Audio Amplifier

A5 AUDIO AMPLIFIER



7708	
HETV	MTV
BC847BS	PUMH7
3716	4710
3721	4711

#	HETV		MTV
	LCD	PDP	
3702	2K2	6K8	10K
3704	470R	1K	-
3728	2K2	5K6	-
3729	3K9	3K3	-
4714	Yes	Yes	No
4715	-	-	Yes
4716	-	-	Yes

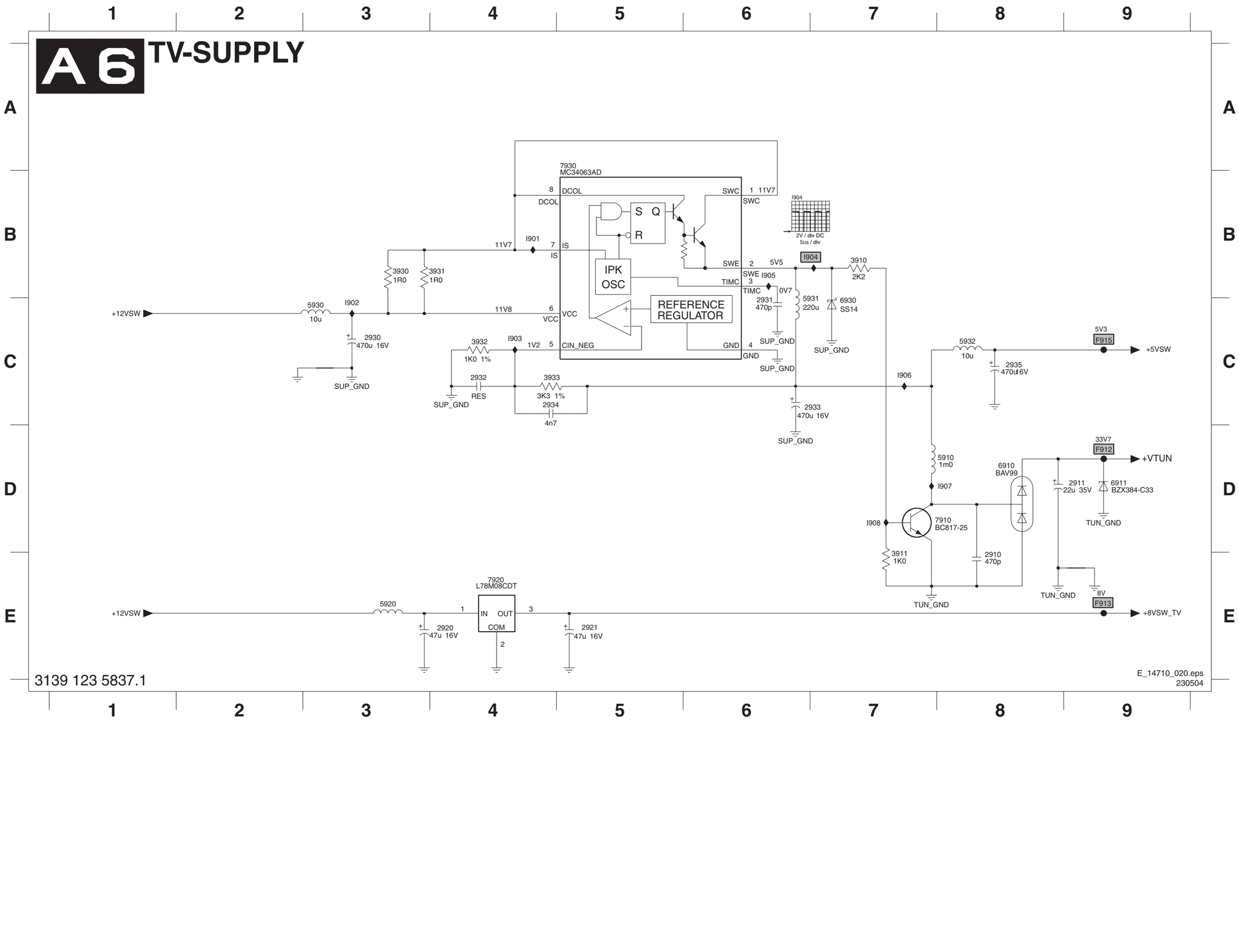
**	ITV	MTV
4706	YES	NO
4707	YES	NO
4708	NO	YES
4709	YES	NO

	ITV	MTV
1701	YES	NO
1703	YES	NO
2702	NO	YES
2708	NO	YES
4701	YES	NO
4702	YES	NO
7708	NO	YES

*	2 X 3W	2 X 5W
3714	12K	8K2
3726	12K	8K2

SSB: TV Supply

A6 TV-SUPPLY



2910 D8
2911 D9
2920 E4
2921 E5
2930 C3
2931 B6
2932 C4
2933 C7
2934 C4
2935 C8
3910 B7
3911 D7
3930 B3
3931 B4
3932 C4
3933 C4
5910 D8
5920 E3
5930 C3
5931 B7
5932 C8
6910 D8
6911 D9
6930 C7
7910 D7
7920 E4
7930 A5
F912 D9
F913 E9
F915 C9
I901 B4
I902 C3
I903 C4
I904 B7
I905 B6
I906 C7
I907 D8
I908 D7

E_14710_020.eps
230504

3139 123 5837.1

SSB: Scaler

A7 SCALER

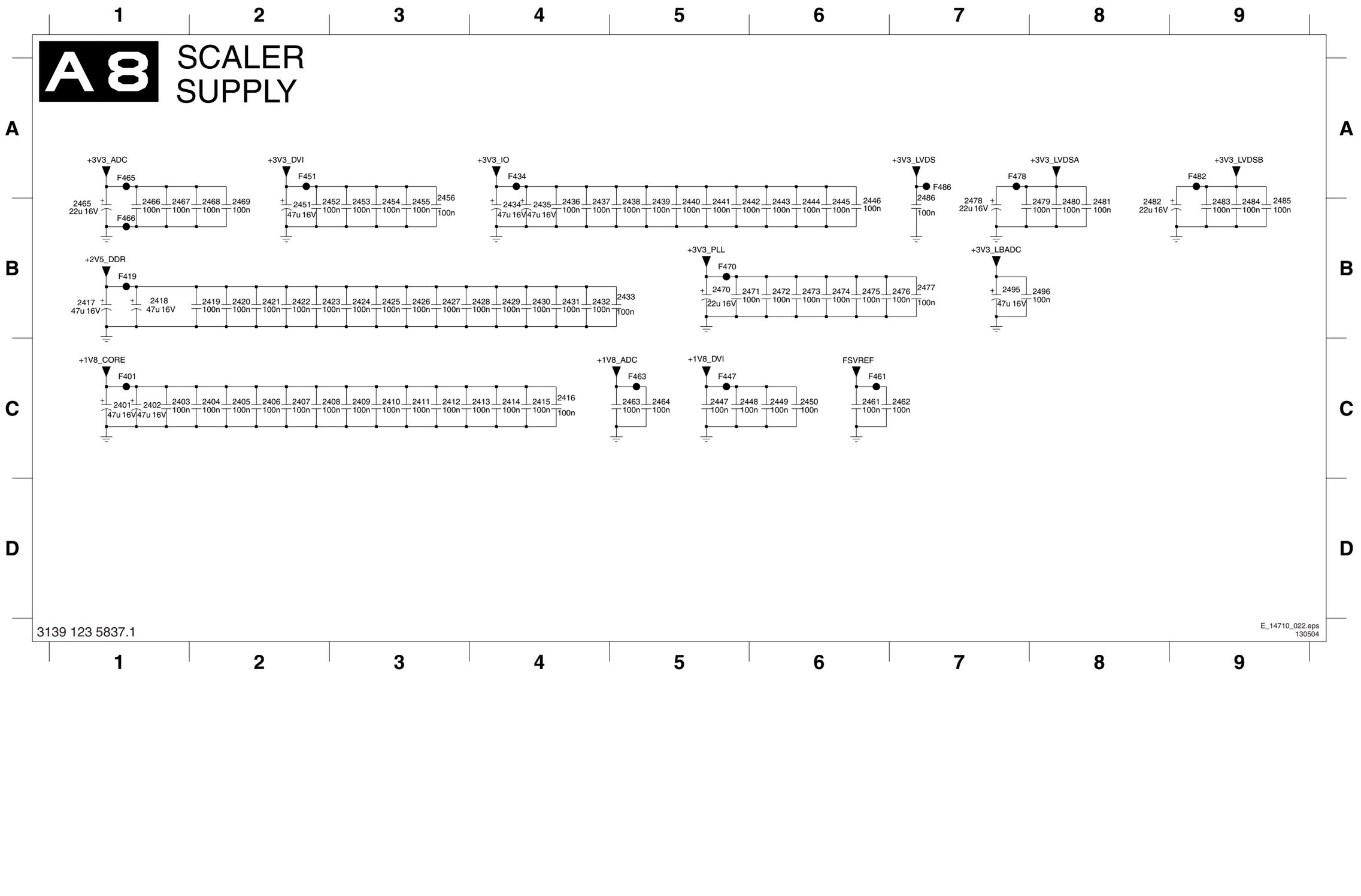
SCALER

3139 123 5837.1

E_14710_021.eps
240604

SSB: Scaler Supply

2401 C1	2405 C2	2409 C3	2413 C4	2417 B1	2421 B2	2425 B3	2429 B4	2433 B5	2437 B4	2441 B5	2445 B6	2449 C6	2453 B3	2461 C6	2465 B1	2469 B2	2473 B6	2477 B7	2481 B8	2485 A9	F401 C1	F451 A2	F466 B1	F486 A7
2402 C1	2406 C2	2410 C3	2414 C4	2418 B1	2422 B2	2426 B3	2430 B4	2434 B4	2438 B5	2442 B6	2446 A6	2450 C6	2454 B3	2462 C7	2466 B1	2470 B5	2474 B6	2478 A7	2482 B8	2486 A7	F419 B1	F461 C6	F470 B5	
2403 C1	2407 C2	2411 C3	2415 C4	2419 B2	2423 B3	2427 B3	2431 B4	2435 B4	2439 B5	2443 B6	2447 C5	2451 B2	2455 B3	2463 C5	2467 B1	2471 B6	2475 B6	2479 B8	2483 B9	2495 B7	F434 A4	F463 C5	F478 A7	
2404 C2	2408 C3	2412 C3	2416 C4	2420 B2	2424 B3	2428 B4	2432 B4	2436 B4	2440 B5	2444 B6	2448 C5	2452 B3	2456 A3	2464 C5	2468 B2	2472 B6	2476 B7	2480 B8	2484 B9	2496 B8	F447 C5	F465 A1	F482 A9	



3139 123 5837.1

E_14710_022.eps
130504

SSB: Scaler Interface

A9 SCALER INTERFACE

A7 TO SCALER

FOR PDP ONLY

4871 4872 +3V3STBY 5872 2872 100n

7872 PCA9515DP VCC SDA0 SDA1 SCL0 SCL1 EN GND NC NC

A7 SDA_IO 3871 68R SDA_DMA_BUS1_DISP F870

A7 SCL_IO 3870 68R SCL_DMA_BUS1_DISP F871

BUF_ENABLE 2870 10p 2871 10p

1860 DLW21S 2860 10p 2861 10p

1861 DLW21S 2862 10p 2863 10p

1862 DLW21S 2864 10p 2865 10p

1863 DLW21S 2866 10p 2867 10p

1864 DLW21S 2868 10p 2869 10p

A7 TXB3+ A7 TXB3- A7 TXBC+ A7 TXBC-

A7 TXB2+ A7 TXB2- A7 TXB1+ A7 TXB1- A7 TXB0+ A7 TXB0-

(1G50) 1450 LVDS CONNECTOR

LVDSD+ LVDSD- LVDSCLK+ LVDSCLK- LVDSC+ LVDSC- LVDSB+ LVDSB- LVDSA+ LVDSA-

(NC)CTRL_DISP3 (NC)CTRL_DISP2 (NC)CTRL_DISP1 (NC)VDISP_2 (NC) VDISP2

F874 F873 FI-WE31P-HF-E1500

A14 PAN_VCC F872 5874 +12V_LCD 2874 10p 2875 10p

FOR LCD ONLY

PROVISION FOR PIXEL+ MODULE

1409 +5VSWI F411 +3V3STBY F412 PIXEL+_SYNC F413 PIXEL+_RESET F414 SCL_IO F415 SDA_IO F416 F418 (RES) S9B-PH-SM3-TB-A

FOR LCD ONLY

BU_LHT_ADJ2 4428 RES 3427 RES I428 4427 RES I436 BU_LIGHT_ADJ2 (NC) 2494 RES +5VSWI +5VSWI

BU_LHT_ADJ1 3416 1K0 3418 390R 7416 SI2301DS-T1 3460 RES I444 4445 RES I437 BU_LIGHT_ADJ1 3444 10K I445 4444 3417 1K0 2493 1u0

3876 68R 2876 10n 2879 10n

LAMP_ON-OFF 3879 68R 2878 10n 2881 10n

POR 3877 68R 2877 10p 2883 10p 2887 10p 2880 10p

A2 FROM HERCULES SC_STANDBY A2 3887 10K I870 7887 BC847BW 2884 10n +3V3STBY 3886 10K I871

+5V2_RELAIS_IO2 4887 RES 4888 (PDP)

3883 68R

POWER_OK

FAN_SPEED1

POWER_OK_UP

FOR PDP ONLY

I872 5882 1u0 I867 3885 68R 2882 10p 2885 10p 2886 10u 2889 10p

A5 FROM AUDIO AMPLIFIER

1403 BACKLIGHT_CTRL I860 LIGHT_ON I861 FAN_SPEED I862 STANDBY I863 PROTECT_AUDIO I864 NC I865 I866 I869 I868 POWER_OK

SA1 TO 1M03 OF SUPPLY (LCD) OR TO CN9005 OF SUB SUPPLY (PDP)

BUF_ENABLE

3139 123 5837.1

E_14710_023.eps 210704

1403 D11 I862 D11
1409 A6 I863 D11
1450 D4 I864 E11
1860 D2 I865 E11
1861 D2 I866 E11
1862 E2 I867 F8
1863 F2 I868 E11
1864 F2 I869 E11
2493 D8 I870 E7
2494 C6 I871 E8
2860 D3 I872 F8
2861 D3
2862 D3
2863 D3
2864 E3
2865 E3
2866 F3
2867 F3
2868 F3
2869 F3
2870 C3
2871 C4
2872 B2
2874 G4
2875 G4
2876 C9
2877 E8
2878 D9
2879 C10
2880 E9
2881 D10
2882 F8
2883 E9
2884 E7
2885 F9
2886 F9
2887 E9
2889 F9
3416 C6
3417 D7
3418 C6
3427 C6
3444 C7
3460 C7
3870 C3
3871 C3
3876 C9
3877 E9
3879 D9
3883 E9
3885 F9
3886 E7
3887 E7
4427 C7
4428 C6
4444 C8
4445 C7
4871 B2
4872 B2
4887 E7
4888 F6
5872 B2
5874 G4
5882 F9
7416 C6
7872 B2
7887 E7
F411 B6
F412 B6
F413 B6
F414 B6
F415 B6
F416 B6
F418 B6
F870 C4
F871 C4
F872 G3
F873 F4
F874 E4
I428 C6
I436 C7
I437 C8
I444 C7
I445 C8
I860 D11
I861 D11

SSB: SDRAM

A10 SDRAM

2501 B1
2502 B1
2503 B1
2504 B1
2505 B2
2506 B2
2507 B2
2508 B3
2509 B3
2510 B3
2511 B3
2512 B4
2513 B4
2514 B4
2515 B5
2516 B5
2517 B4
2526 B4
3501 B3
3502 C3
3503 C2
7501 C3
F501 C3
I502 C2
I503 B2

+2V5_DDR
2501 47u
2502 47u
2503 100n
2504 100n
2505 100n
2506 100n
2507 100n
2508 100n
2509 100n
2510 100n
2511 100n
2512 100n
2513 100n
2514 100n
2515 100n
2516 100n

+2V5_DDR
3501 10K 1%
FSVREF
F501
FSVREF
3502 10K 1%
2526 16V 22u
2517 100n
+2V5_DDR

A7 FSCLK+ I503
3503 150R 1%
A7 FSCLK- I502

7501
K4D263238M-QC50
SDRAM
1M X 32 X 4
VREF VDD VDDQ VSS VSSQ
NC RFU MCL DQS

A7 FSRAS CS
A7 FSCAS RAS
A7 FSWE CAS
WE
A7 FSCLK+ CK
A7 FSCLK- CK
A7 FSCKE CKE
A7 FSDQM0 DM
A7 FSDQM1
A7 FSDQM2
A7 FSDQM3
A7 FSBKSEL0 BA
A7 FSBKSEL1
A7 FSADDR0 A
A7 FSADDR1
A7 FSADDR2
A7 FSADDR3
A7 FSADDR4
A7 FSADDR5
A7 FSADDR6
A7 FSADDR7
A7 FSADDR8
A7 FSADDR9
A7 FSADDR10
A7 FSADDR11

A7
TO/FROM SCALER

FSDATA0 A7
FSDATA1 A7
FSDATA2 A7
FSDATA3 A7
FSDATA4 A7
FSDATA5 A7
FSDATA6 A7
FSDATA7 A7
FSDATA8 A7
FSDATA9 A7
FSDATA10 A7
FSDATA11 A7
FSDATA12 A7
FSDATA13 A7
FSDATA14 A7
FSDATA15 A7
FSDATA16 A7
FSDATA17 A7
FSDATA18 A7
FSDATA19 A7
FSDATA20 A7
FSDATA21 A7
FSDATA22 A7
FSDATA23 A7
FSDATA24 A7
FSDATA25 A7
FSDATA26 A7
FSDATA27 A7
FSDATA28 A7
FSDATA29 A7
FSDATA30 A7
FSDATA31 A7

FSDQS A7

3139 123 5837.1

E_14710_024.eps
130504

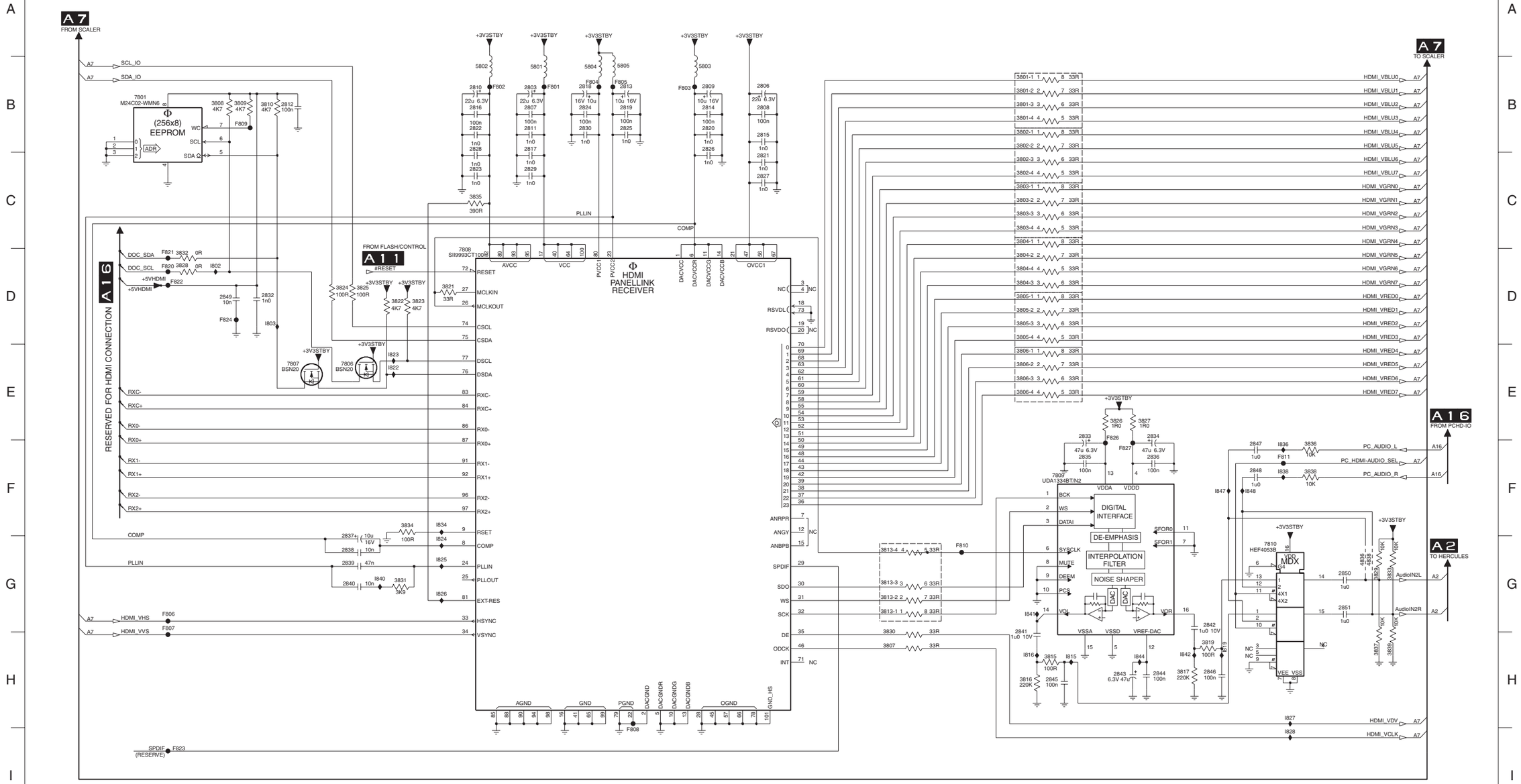
SSB: Flash / Control

A 1 1 FLASH / CONTROL

Item	LCD 30"	PQP 42"	AUO 30"
3549	1K	1K	RES
3551	1K	RES	RES
3552	1K	1K	RES
3553	1K	1K	1K
3550	1K	1K	1K

SSB: HDMI

A12 HDMI (RESERVED)

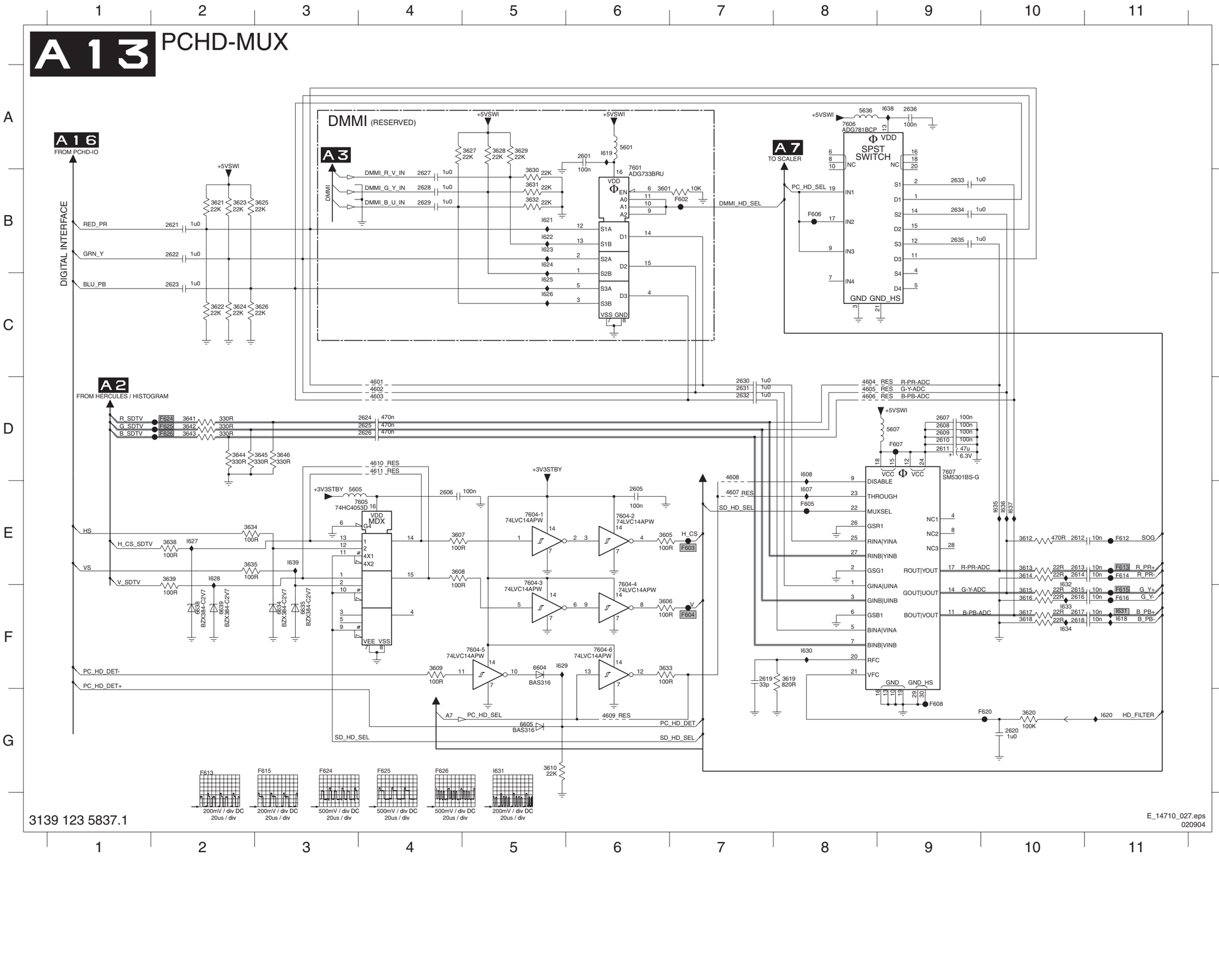


3139 123 5837.1

E_14710_026.eps
230604

SSB: PCHD MUX

A 13 PCHD-MUX



3139 123 5837.1

E_14710_027.eps
020904

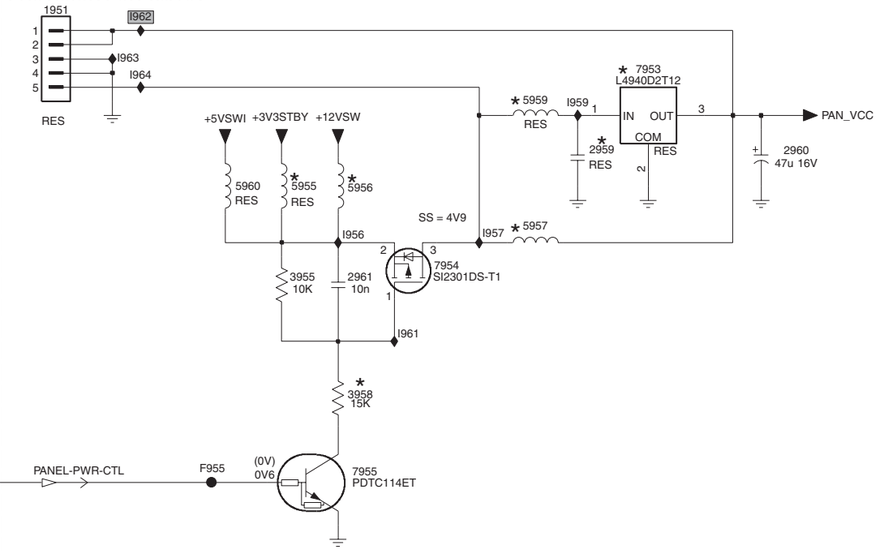
2601 A6
2605 E6
2606 E4
2607 D9
2608 D9
2609 D9
2610 D9
2611 D9
2612 E10
2613 E10
2614 E10
2615 F10
2616 F10
2617 F10
2618 F10
2619 F7
2620 G10
2621 B2
2622 B2
2623 C2
2624 D4
2625 D4
2626 D4
2627 B4
2628 B4
2629 B4
2630 D7
2631 D7
2632 D7
2633 B9
2634 B9
2635 B9
2636 A9
3601 B6
3605 E6
3606 F6
3607 E4
3608 E4
3609 F4
3610 G5
3612 E10
3613 E10
3614 E10
3615 F10
3616 F10
3617 F10
3618 F10
3619 F8
3620 G10
3621 B2
3622 C2
3623 B2
3624 C2
3625 B3
3626 C3
3627 A5
3628 A5
3629 A5
3630 A5
3631 B5
3632 B5
3633 F6
3634 E2
3635 E2
3638 E2
3639 E2
3641 D2
3642 D2
3643 D2
3644 D2
3645 D3
3646 D3
4601 D4
4602 D4
4603 D4
4604 D8
4605 D8
4606 D8
4607 E7
4608 D7
4609 G6
4610 D4
4611 D4
5601 A6
5605 E3
5607 D9
5636 A8
6604 F5
6605 G5
6634 F3
6635 F3
6638 F2
6639 F2
7601 B6
7604-1 E5
7604-2 E6
7604-3 F5
7604-4 F6
7604-5 F5
7604-6 F6
7605 E4
7606 A8
7607 D9
F602 B7
F603 E7
F604 F7
F605 E8
F606 B8
F607 D9
F608 G9
F612 E11
F613 E11
F614 E11
F615 E11
F616 E11
F620 G10
F624 D2
F625 D2
F626 D2
I607 E8
I608 D8
I618 F11
I619 A6
I620 G11
I621 B5
I622 B5
I623 B5
I624 B5
I625 C5
I626 C5
I627 E2
I628 E2
I629 F5
I630 F8
I631 F11
I632 E10
I633 E10
I634 F10
I635 E10
I636 E10
I637 E10
I638 A9
I639 E3

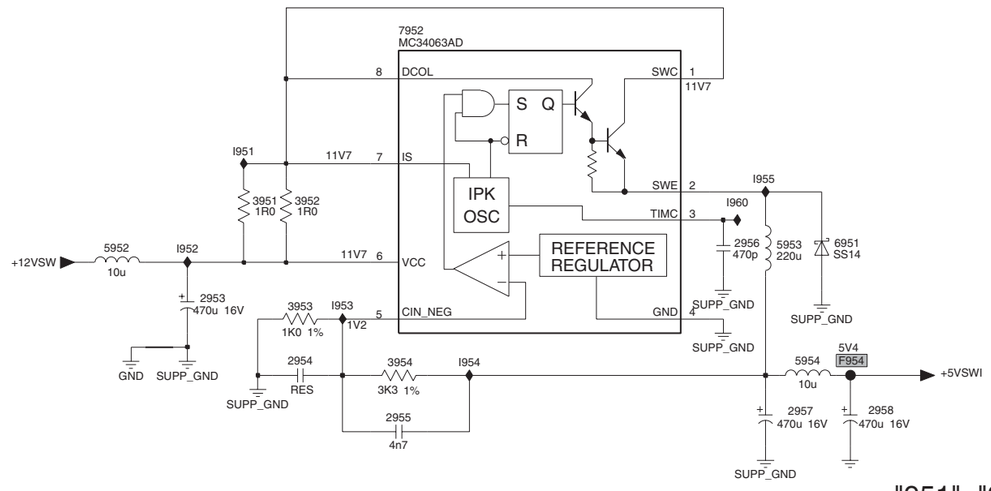
SSB: Supply

A 1 4 SUPPLY

NOT FOR PDP

PROVISION FOR 1.5A 5V

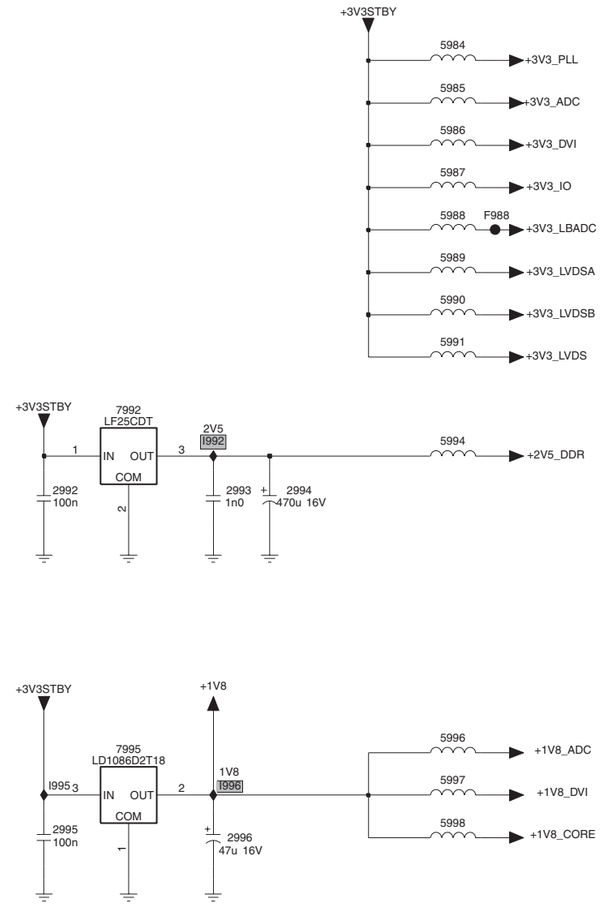




"951"~"979"

ITEM	13"	≥15"
2959	---	100N
3958	1K	15K
5954	---	YES
5955	YES	---
5956	---	YES
5957	YES	---
7953	---	L4940D2T12

SUPPLY FOR SCALER



"980"~"999"

E_14710_028.eps
020904

1951 B2
2953 F2
2954 F2
2955 G3
2956 F5
2957 G5
2958 G5
2959 B4
2960 B5
2961 C3
2992 D7
2993 D8
2994 D8
2995 E7
2996 E8
3951 F2
3952 F2
3953 F2
3954 F3
3955 C3
3958 C3
5952 F1
5953 F5
5954 F5
5955 B3
5956 B3
5957 C4
5959 B4
5960 B2
5984 A9
5985 B9
5986 B9
5987 B9
5988 B9
5989 C9
5990 C9
5991 C9
5994 C9
5996 E9
5997 E9
5998 E9
6951 F5
7952 E3
7953 B5
7954 C4
7955 D3
7992 C8
7995 E8
F954 F5
F955 D2
F988 B9
I951 E2
I952 F2
I953 F3
I954 F3
I955 F5
I956 C3
I957 C4
I959 B4
I960 F5
I961 C3
I962 B2
I963 B2
I964 B2
I992 C8
I995 E7
I996 E8

SSB: DC-DC Converter

A15 DC-DC CONVERTER

SUPPLY

SA1 (LCD)
TO 1M46 OF SUPPLY
OR
TO CN9004 OF SUB SUPPLY (PDP)

1251
1 NC
2 NC
3 F251
4 F252
5 F253
6 NC
7 F254
8 F255
9 NC
10 F257
11 NC

3251 1R0 — I264 — +8V6

4251 RES

+12V — 5251 — +12VUNREG — F258 — +12VSW

+5V — 5252

2251 10p
2252 10p
2253 10u 16V
2254 10u 16V

A3 TO/FROM 1M20 OF HERCULES

+9V_STBY_PDP — 4255 (PDP) — +5V2 — +5V2_RELAIS_IO2 — A3 A3

2255 10p (PDP)
5257 (LCD)
5258 (LCD)
I251
5259 (PDP)

7260 LF33CPT
IN 1 — I252
CTRL 2 — I253
OUT 5 — F260 — +3V3STBY
NC 4
COM 3

3259 10K
6259 SS14
3260 6K8
2261 RES
2262 47u 16V

+12VUNREG — 6262 SS24 — I254 — 5262 10u — I255

2263 10u
2264 10u

7262 L5973D
VCC 8
VREF 6 NC
INH 3
SYNC 2 NC
GND 7
GND_HS 9
OUT 1 — I256
FB 5 — I257
COMP 4 — I258

5267 33u — I260 — 5268 10u

3267 5K6 1%
3268 3K3 1%
2265 220p
2266 22n
6267 SS36
I259
3266 4K7
2268 470u 16V
2269 470u 16V

SupplyGnd

+12VUNREG
6270 BZX384-C8V2
I261
3270 2K2
3271 470R
2271 10n
I262

+3V3STBY
3273 220K
3274 22K
I263
7271 BC847BW
7272 BC847BW
F259 POWER_DOWN — A2 A5

A2
A5

3139 123 5837.1

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020904

1251 A1
2251 B2
2252 B2
2253 B3
2254 B3
2255 B2
2261 D4
2262 D4
2263 D3
2264 D4
2265 E5
2266 E5
2268 E7
2269 E7
2271 B6
3251 A2
3259 D2
3260 D3
3266 E5
3267 E6
3268 E6
3270 B6
3271 B6
3273 A7
3274 A7
4251 A2
4255 B2
5251 A3
5252 A3
5257 B3
5258 B3
5259 C3
5262 D3
5267 D6
5268 D7
6259 D3
6262 D3
6267 E6
6270 A6
7260 C4
7262 D4
7271 B7
7272 B6
F251 A1
F252 A1
F253 A1
F254 A1
F255 A1
F257 B1
F258 A4
F259 B7
F260 C7
I251 C3
I252 C4
I253 C4
I254 D3
I255 D4
I256 D5
I257 E5
I258 E5
I259 E5
I260 D7
I261 A6
I262 B6
I263 B6
I264 A2

SSB: PCHD IO

A16 PCHD-IO

VGA Connector

1687
F680
F681
F682
F683
F688 3782 150R
I682 BAS316 6693 I683 5686 DDC_5V
F689 3784 1K0
I684 3783 10K +5VSWI
F684
F685
F686
F687 SCL_VGA
SDA_VGA
17 16
788624-1
2784 330p
2785 330p
2688 100n

5683 3683 75R RED_PR A13
5684 3684 75R GRN_Y A13
5687 3687 75R BLU_PB A13
3689 100R I690 PC_HD_DET+ A13
PC_HD_DET- A13
3788 1K0
5685 3686 220R 3685 2K2 2686 100p I681 HS A13
5680 3681 220R 3680 2K2 2681 100p I680 VS A13

A13 TO PCHD-MUX

A7 TO SCALER

DDC_5V
I685 2693 100n
Φ (256x8) EEPROM
WC F690 3693 10K
SCL
SDA
ADR
7693 M24C02-WMN6
DDC_5V
3696 10K
3697 10K
3786 RES UART_RX A7
3787 RES UART_TX A7

A12 TO HDMI

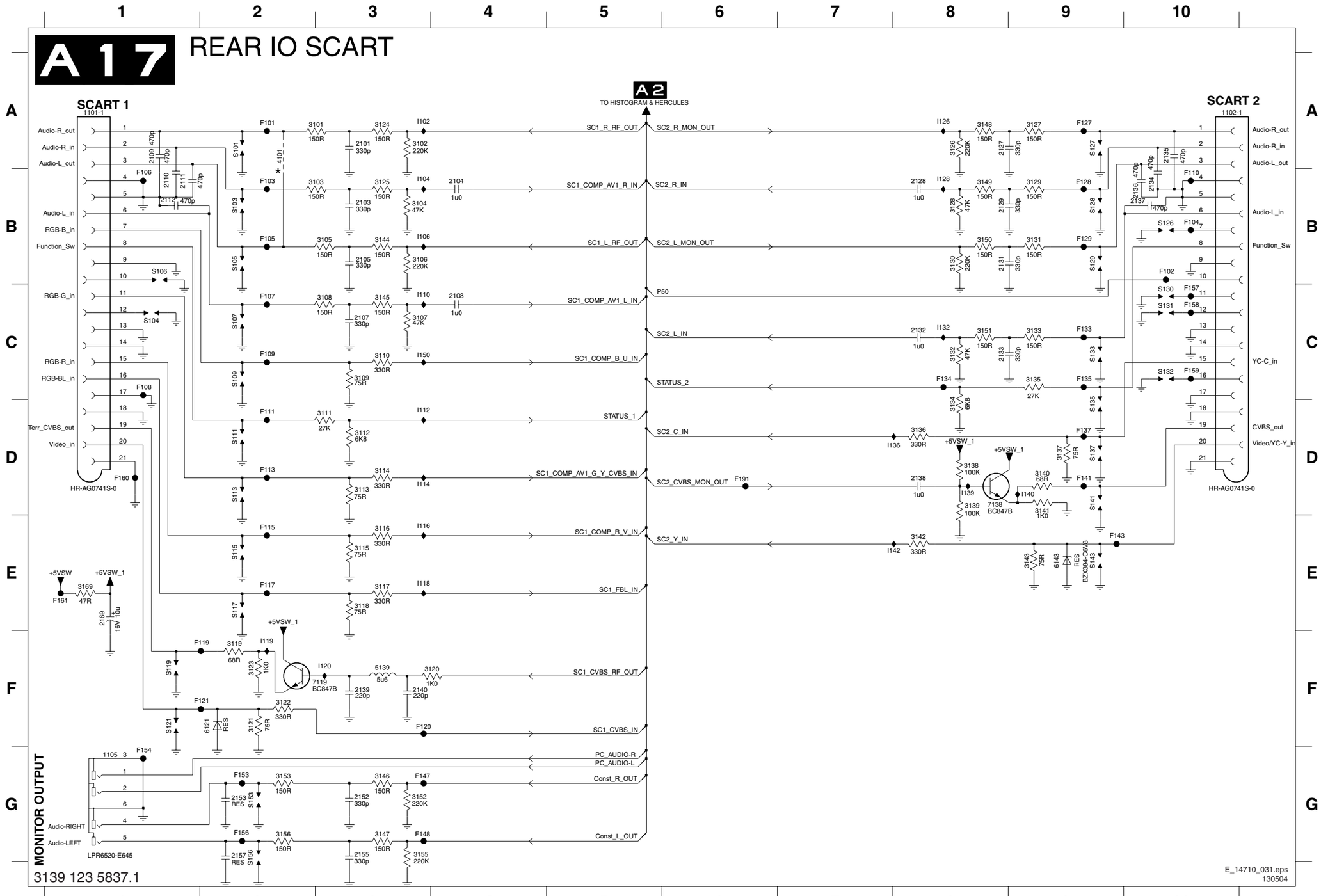
TO 1105 OF REAR IO SCART
A17 PC_AUDIO-L I722 S698 3698 150R I699 PC_AUDIO_L A12
A17 PC_AUDIO-R I723 S699 3699 150R I700 PC_AUDIO_R A12
2698 100p 3700 47K 2699 100p 3781 47K
A17

3139 123 5837.1
E_14710_030.eps 130504

1687 A1
2681 D7
2686 D7
2688 C2
2693 D2
2698 F3
2699 F4
2784 C1
2785 C2
3680 D6
3681 D6
3683 B6
3684 B6
3685 D6
3686 D6
3687 C6
3689 C5
3693 E3
3696 D4
3697 D4
3698 F3
3699 F3
3700 F4
3781 F4
3782 B2
3783 B3
3784 B2
3786 E5
3787 E5
3788 C6
5680 D6
5683 A6
5684 B6
5685 D6
5686 B3
5687 B6
6693 B3
7693 E2
F680 B2
F681 B2
F682 B2
F683 B2
F684 B2
F685 B2
F686 B2
F687 C2
F688 B2
F689 B2
F690 E3
I680 D8
I681 D8
I682 B2
I683 B3
I684 B2
I685 D2
I690 C8
I699 F8
I700 F8
I722 F2
I723 F2
S698 F2
S699 F2

SSB: Rear IO Scart

A17 REAR IO SCART



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1102-1 A10	6143 E9
1105 G1	7119 F3
2101 A3	7138 D8
2103 B3	F101 A2
2104 B4	F102 B10
2105 B3	F103 B2
2107 C3	F104 B10
2108 C4	F105 B2
2109 A1	F106 B1
2110 B1	F107 C2
2111 B1	F108 C1
2112 B1	F109 C2
2127 A8	F110 B10
2128 B8	F111 D2
2129 B8	F113 D2
2131 B8	F115 E2
2132 C8	F117 E2
2133 C8	F119 F2
2134 B10	F120 F3
2135 A10	F121 F2
2136 B10	F127 A9
2137 B10	F128 B9
2138 D8	F129 B9
2139 F3	F133 C9
2140 F3	F134 C8
2152 G3	F135 C9
2153 G2	F137 D9
2155 G3	F141 D9
2157 G2	F143 E9
2169 E1	F147 G3
3101 A3	F148 G3
3102 A3	F153 G2
3103 B3	F154 G1
3104 B3	F156 G2
3105 B3	F157 C10
3106 B3	F158 C10
3107 C3	F159 C10
3108 C3	F160 D1
3109 C3	F161 E1
3110 C3	F191 D6
3111 D3	I102 A3
3112 D3	I104 B3
3113 D3	I106 B3
3114 D3	I110 C3
3115 E3	I112 D3
3116 E3	I114 D3
3117 E3	I116 E3
3118 E3	I118 E3
3119 F2	I119 F2
3120 F4	I120 F3
3121 F2	I126 A8
3122 F2	I128 B8
3123 F2	I132 C8
3124 A3	I136 D8
3125 B3	I139 D8
3126 A8	I140 D9
3127 A9	I142 E8
3128 B8	I150 C3
3129 B9	S101 A2
3130 B8	S103 B2
3131 B9	S104 C1
3132 C8	S105 B2
3133 C9	S106 B1
3134 D8	S107 C2
3135 C9	S109 C2
3136 D8	S111 D2
3137 D9	S113 D2
3138 D8	S115 E2
3139 D8	S117 E2
3140 D9	S119 F1
3141 D9	S121 F1
3142 E8	S126 B10
3143 E9	S127 A9
3144 B3	S128 B9
3145 C3	S129 B9
3146 G3	S130 C10
3147 G3	S131 C10
3148 A8	S132 C10
3149 B8	S133 C9
3150 B8	S135 D9
3151 C8	S137 D9
3152 G3	S141 D9
3153 G2	S143 E9
3155 G3	S153 G2
3156 G2	S156 G2
3169 E1	
4101 A2	
5139 F3	

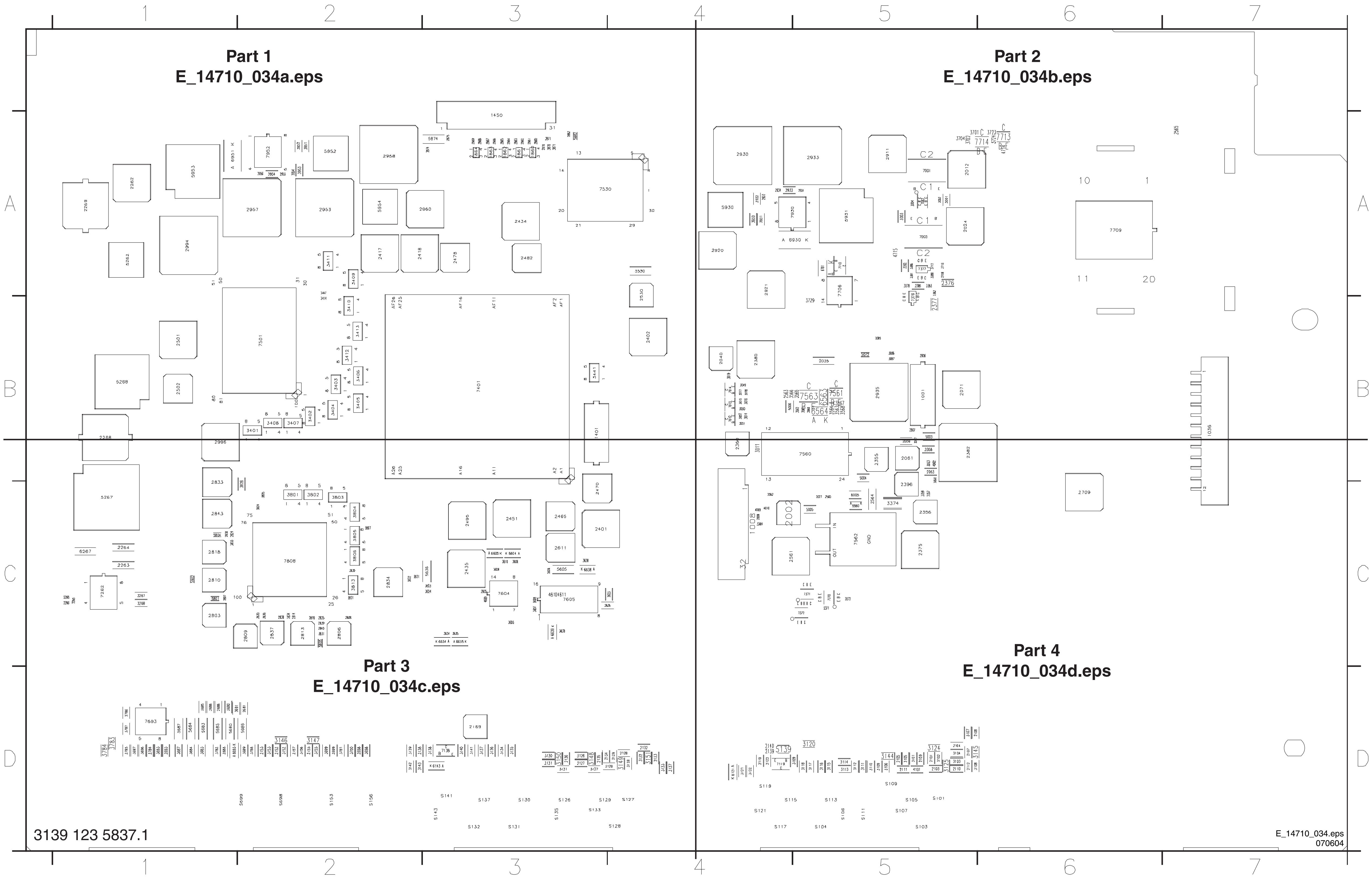
Layout Small Signal Panel (Top Side Overview)

1001	B5	2027	C5	2127	D3	2169	D3	2386	A5	2530	A4	2699	D2
1008	C4	2035	B5	2128	D4	2262	A1	2392	A5	2560	C5	2708	A5
1036	B7	2040	B4	2129	D4	2263	C1	2396	C5	2561	C4	2709	C6
1401	B3	2061	B5	2131	D3	2264	C1	2401	C3	2562	C4	2784	D1
1450	A3	2063	B5	2132	D4	2265	C1	2402	B4	2563	B4	2785	D1
1860	A3	2071	B5	2133	D4	2266	C1	2417	A2	2564	C5	2803	C1
1861	A3	2089	C4	2134	D3	2268	B1	2418	A2	2565	A7	2806	C2
1862	A3	2101	D5	2135	D3	2269	A1	2434	A3	2605	C3	2807	C1
1863	A3	2103	D5	2136	D3	2355	B5	2435	C3	2606	C3	2808	C2
1864	A3	2104	D5	2137	D4	2356	C5	2451	C3	2611	C3	2809	C2
2002	C4	2105	D5	2138	D2	2357	C5	2465	C3	2625	C4	2810	C1
2006	B5	2107	D5	2139	D4	2360	B4	2470	C3	2626	C4	2813	C2
2007	B5	2108	D5	2140	D4	2375	C5	2478	A3	2681	D2	2814	C2
2008	B5	2109	D5	2152	D2	2376	A5	2482	A3	2686	D1	2818	C1
2009	B5	2110	D5	2153	D2	2377	B5	2495	C3	2688	D1	2819	C2
2012	A5	2111	D5	2155	D2	2380	B4	2501	B1	2693	D1	2820	C2
2024	A5	2112	D5	2157	D2	2382	B5	2502	B1	2698	D2	2824	C1

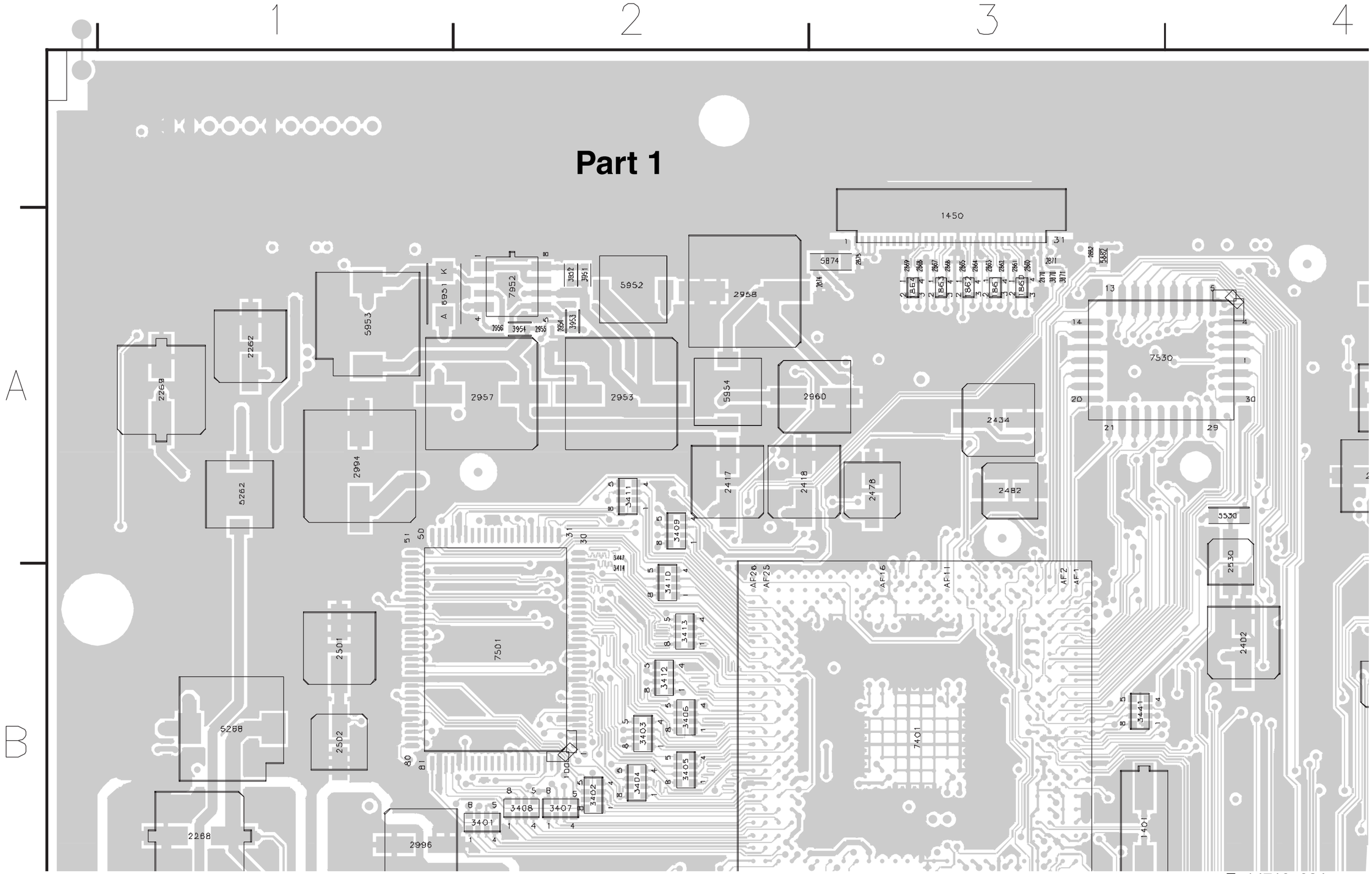
2825	C2	2867	A3	2953	A2	3016	B4	3105	D5	3122	D4	3139	D2
2826	C2	2868	A3	2954	A2	3017	B4	3106	D5	3123	D4	3140	D3
2830	C1	2869	A3	2955	A2	3018	B4	3107	D5	3124	D5	3141	D3
2833	C1	2870	A3	2956	A2	3019	B4	3108	D5	3125	D5	3142	D2
2834	C2	2871	A3	2957	A2	3049	B4	3109	D5	3126	D3	3143	D2
2837	C2	2874	A3	2958	A2	3050	B4	3110	D5	3127	D3	3144	D5
2838	C2	2875	A3	2960	A3	3051	B4	3111	D5	3128	D4	3145	D5
2839	C2	2882	A3	2994	A1	3052	B4	3112	D5	3129	D4	3146	D2
2840	C2	2911	A5	2996	B1	3053	B5	3113	D5	3130	D3	3147	D2
2843	C1	2920	A4	3001	A5	3060	B5	3114	D5	3131	D3	3148	D3
2860	A3	2921	A4	3002	A5	3085	B5	3115	D5	3132	D4	3149	D4
2861	A3	2930	A4	3003	A5	3086	B5	3116	D5	3133	D4	3150	D3
2862	A3	2931	A5	3004	A5	3087	B5	3117	D5	3134	D3	3151	D4
2863	A3	2932	A4	3007	B5	3101	D5	3118	D5	3135	D3	3152	D2
2864	A3	2933	A5	3011	B4	3102	D5	3119	D4	3136	D3	3153	D2
2865	A3	2934	A4	3014	B4	3103	D5	3120	D5	3137	D3	3155	D2
2866	A3	2935	B5	3015	B4	3104	D5	3121	D4	3138	D3	3156	D2

3169	D5	3403	B2	3563	B5	3635	C3	3701	A5	3803	C2
3266	C1	3404	B2	3564	B5	3638	C3	3702	A5	3804	C2
3267	C1	3405	B2	3565	B5	3639	C3	3704	A5	3805	C2
3268	C1	3406	B2	3566	B4	3680	D1	3712	A5	3806	C2
3359	C5	3407	B2	3567	B5	3681	D1	3713	A5	3807	C2
3364	C4	3408	B2	3568	B5	3683	D1	3723	A6	3813	C2
3371	C5	3409	A2	3605	C3	3684	D1	3724	A6	3821	C2
3372	C5	3410	B2	3606	C3	3685	D1	3729	B5	3824	C2
3374	C5	3411	A2	3607	C3	3686	D1	3781	D2	3825	C2
3378	A5	3412	B2	3608	C3	3687	D1	3782	D1	3826	C2
3380	A5	3413	B2	3609	C3	3689	D2	3783	D1	3830	C2
3381	A5	3414	B2	3610	C3	3693	D1	3784	D1	3831	C2
3382	A5	3441	B3	3621	C2	3696	D1	3786	D1	3834	C2
3383	A5	3447	A2	3622	C2	3697	D1	3787	D1	3835	C1
3386	A5	3560	B5	3623	C3	3698	D2	3788	D2	3870	A3
3401	B2	3561	B5	3624	C3	3699	D2	3801	C2	3871	A3
3402	B2	3562	B5	3634	C3	3700	D2	3802	C2	3930	A4

3931	A4	5004	B5	5687	D1	6564	B5	7119	D4	7693	D1
3932	A4	5005	C5	5801	C1	6604	C3	7138	D3	7706	A5
3933	A4	5006	B4	5802	C1	6605	C3	7262	C1	7709	A6
3951	A2	5072	B5	5804	C1	6634	C3	7370	C5	7710	A5
3952	A2	5139	D4	5805	C2	6635	C3	7371	C5	7713	A6
3953	A2	5262	A1	5874	A3	6638	C3	7372	C5	7714	A6
3954	A2	5267	C1	5882	A3	6639	C3	7376	B5	7808	C2
4009	C4	5268	B1	5930	A4	6693	D1	7377	A5	7930	A4
4010	C4	5530	A4	5931	A5	6701	A5	7401	B3	7952	A2
4062	B5	5560	C5	5952	A2	6930	A5	7501	B2		
4101	D5	5605	C3	5953	A1	6951	A1	7530	A3		
4609	C3	5636	C3	5954	A2	7001	A5	7560	B5		
4610	C3	5680	D1	6005	C5	7002	A5	7561	B5		
4611	C3	5683	D1	6121	D4	7003	A5	7562	C5		
4714	A6	5684	D1	6143	D3	7012	B4	7563	B5		
4715	A5	5685	D1	6267	C1	7013	B4	7604	C3		
5003	B5	5686	D2	6563	B5	7014	B4	7605	C3		



Layout Small Signal Panel (Top Side Part 1)



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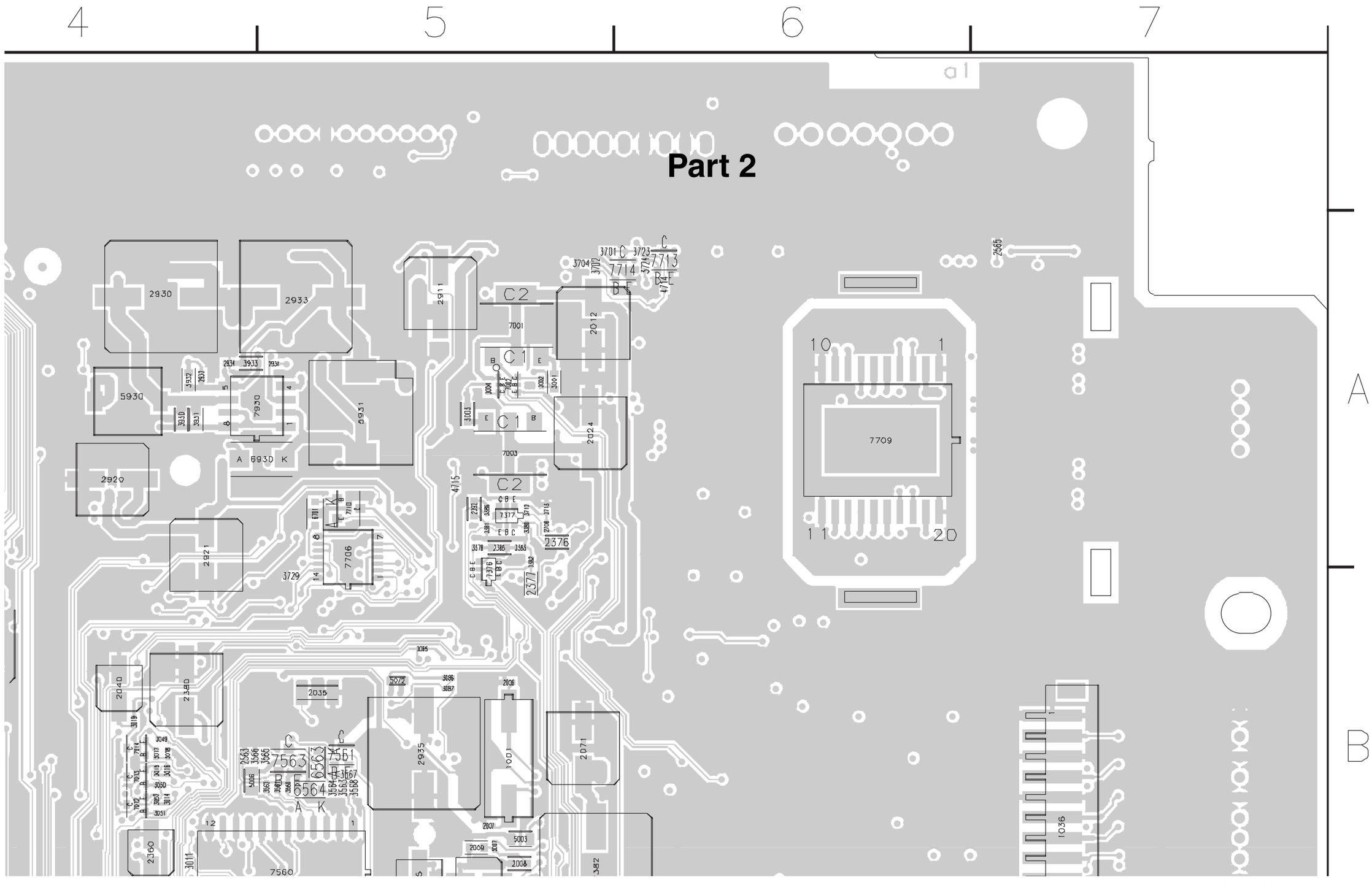
Layout Small Signal Panel (Top Side Part 2)



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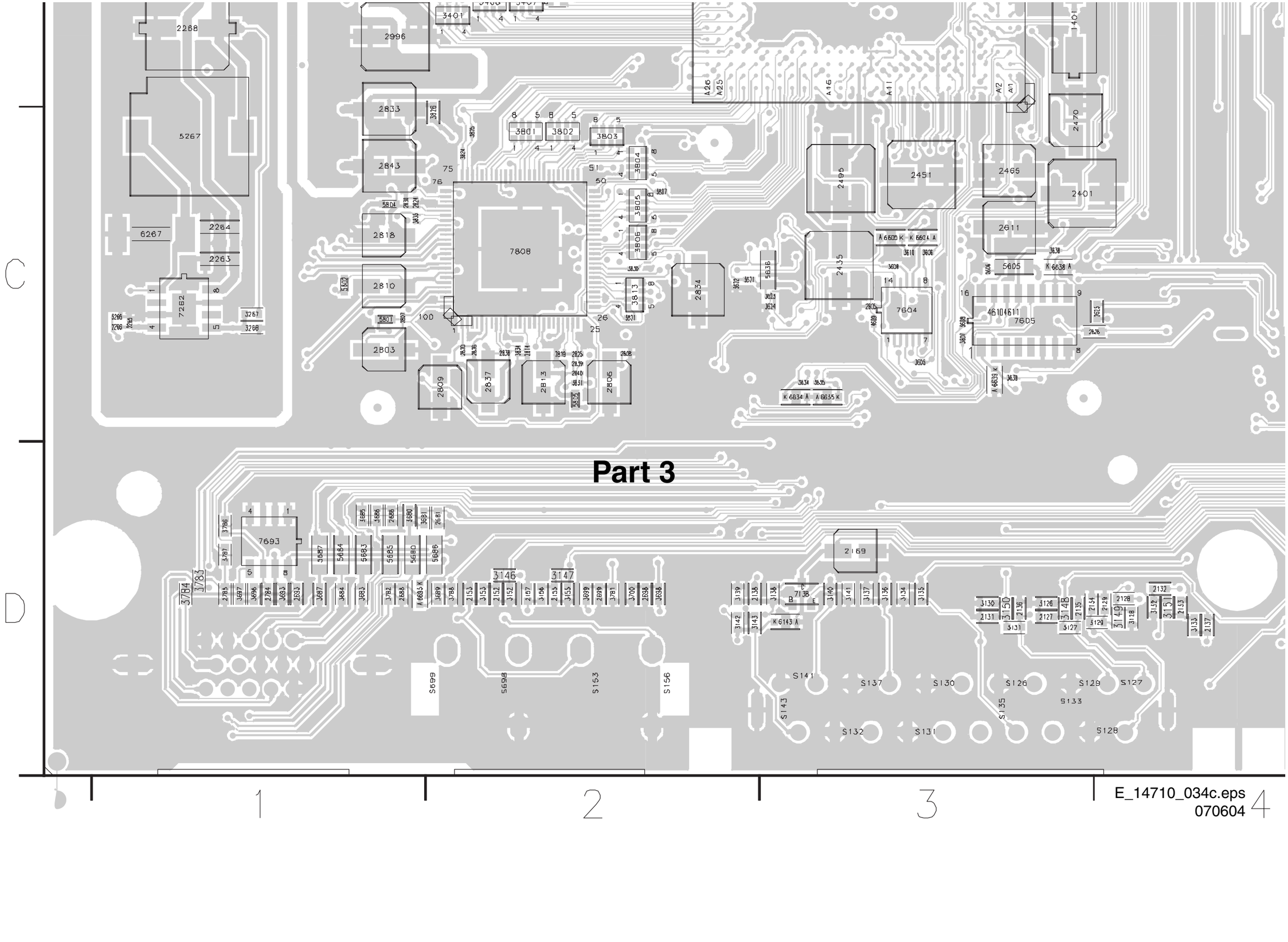
Layout Small Signal Panel (Top Side Part 3)



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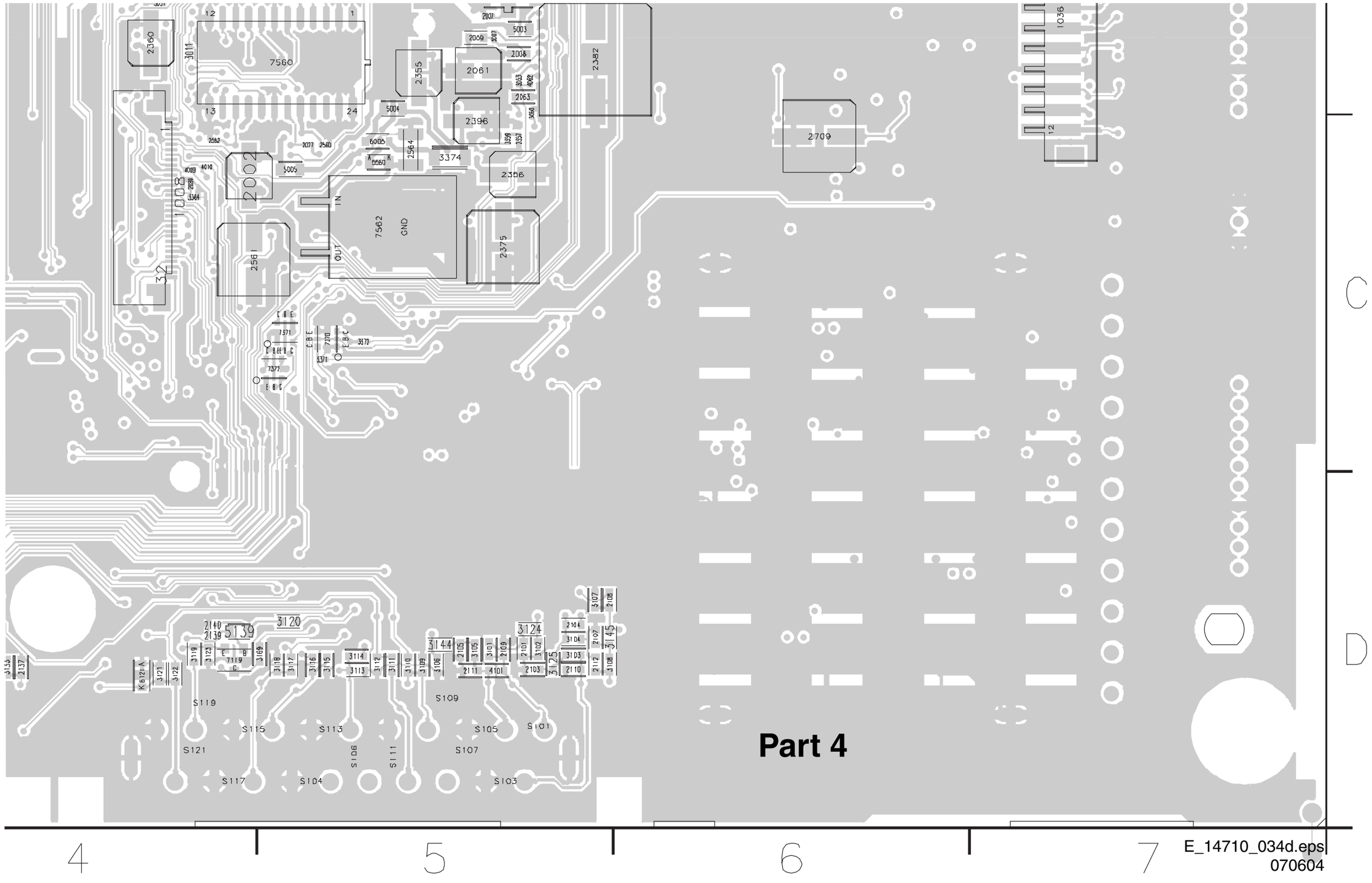

Layout Small Signal Panel (Bottom Side Overview)

1004 C4 2005 B2 2029 B4 2050 C1 2069 B1 2088 B1 2271 A7 2364 B4 2398 C3 2421 B5 2440 B5 2462 B6 2483 B5 2508 B6 2582 A3 2617 C5 2636 C5 2720 A1 2812 C7 2846 C6 2887 A4 3021 A3 3038 B1 3070 B3 3092 B3 3309 D1 3329 D2 3633 C5 4327 C2 5910 A4
1009 C3 2010 B2 2030 B4 2051 A3 2070 B3 2090 B1 2302 D1 2365 C4 2403 B5 2422 B5 2441 B5 2463 B5 2484 B5 2509 B6 2583 A3 2618 C5 2701 B1 2735 A1 2815 C6 2847 C6 2889 A5 3022 A3 3039 A3 3071 C4 3093 B4 3311 D1 3340 A3 3641 C4 4328 C2 5920 A4
1301 D2 2011 B2 2031 B4 2052 B4 2072 B3 2091 B1 2303 D1 2366 B4 2404 B5 2423 B6 2442 B5 2464 B5 2485 B5 2510 B6 2584 A3 2619 C5 2702 C2 2736 A1 2816 C6 2848 C6 2910 A3 3023 B1 3040 B4 3072 B1 3094 B4 3313 C3 3342 A3 3642 C4 4329 C2 5932 A3
1328 C2 2013 C3 2032 B4 2053 C4 2073 B3 2092 B1 2307 C2 2367 B4 2405 B5 2424 B6 2443 B5 2466 B5 2486 B5 2511 B6 2585 A3 2620 C5 2703 B2 2737 A1 2817 C6 2849 C7 2959 A6 3024 B1 3048 B4 3073 B3 3096 B3 3314 C2 3343 A3 3643 C4 4330 C2 5955 A5
1329 B2 2014 C3 2033 B4 2054 B2 2074 B3 2093 B1 2308 C1 2368 C4 2406 B5 2425 B6 2444 B5 2467 B5 2487 B5 2512 B7 2586 A3 2621 C5 2704 B2 2738 A1 2821 C6 2850 C6 2961 A5 3025 C1 3054 B4 3074 C3 3097 B3 3315 C3 3344 A3 3644 C4 4331 C2 5956 A5
1330 C2 2015 C3 2034 A3 2055 B4 2076 B3 2094 B1 2309 C2 2370 C3 2407 B5 2426 B6 2445 B5 2468 B5 2488 B5 2513 B7 2587 A3 2622 C5 2705 B2 2739 B2 2822 C6 2851 C6 2992 A6 3026 C1 3055 C4 3075 B3 3098 B4 3316 C2 3345 A4 3645 C4 4332 C2 5957 A6
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1409 B7 2017 C3 2037 B1 2057 C1 2078 B4 2096 C1 2313 C2 2372 C3 2409 B5 2428 B6 2447 B5 2471 B5 2491 C5 2515 B7 2601 C5 2624 C4 2707 B1 2741 A2 2827 C6 2876 A4 2995 B6 3028 C4 3057 B3 3078 B3 3259 A7 3319 C2 3347 A3 3703 C2 4334 C2 5960 A5
1530 A5 2018 C3 2041 B4 2058 C1 2079 B1 2097 C1 2314 C2 2373 C3 2410 B5 2429 B6 2448 B5 2472 B5 2492 B5 2516 B7 2607 C5 2627 C5 2710 B1 2742 A2 2828 C6 2877 A4 3000 B2 3029 A4 3058 A4 3079 B3 3260 A7 3320 C2 3348 A3 3705 C2 4335 C2 5984 B5
1532 B4 2019 A3 2042 A3 2059 B1 2080 B1 2098 C1 2317 C3 2374 C3 2411 B5 2430 B6 2449 B5 2473 B5 2493 B6 2517 B7 2608 C5 2628 C5 2711 B2 2743 B2 2829 C6 2878 A4 3005 B2 3030 B4 3059 B2 3080 B3 3270 A7 3321 C2 3349 A4 3706 B2 4336 C2 5985 B5
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1701 C2 2021 A4 2044 B4 2062 D1 2082 C3 2251 A7 2321 C2 2381 B4 2413 B5 2432 B6 2452 B5 2475 B5 2496 B5 2531 B5 2610 C5 2630 C5 2713 A2 2746 A2 2835 C6 2880 A4 3008 B2 3032 B4 3064 C4 3082 B3 3273 A7 3323 C2 3358 C3 3708 B2 4338 B2 5987 B5
1951 A5 2022 B4 2045 C1 2064 B2 2083 C3 2252 A7 2324 C2 2387 C3 2414 B5 2433 B6 2453 B5 2476 B5 2503 A6 2532 B4 2612 C5 2631 C5 2714 A1 2747 A2 2836 C6 2881 A4 3009 C3 3033 C4 3065 C2 3083 B3 3274 A7 3324 C2 3360 C4 3709 B2 4339 D1 5988 B5
2000 B2 2023 C4 2046 C1 2065 C3 2084 B4 2253 A7 2358 C3 2388 C3 2415 B5 2436 B5 2454 B5 2477 B5 2504 B6 2533 A4 2613 C5 2632 C5 2715 B2 2748 A2 2841 C6 2883 A4 3010 B2 3034 B4 3066 C1 3084 D1 3302 D1 3325 C2 3361 C4 3710 B2 4340 D1 5989 B5
2001 B2 2025 B4 2047 A4 2066 C3 2085 B3 2254 A7 2359 C2 2394 B4 2416 B5 2437 B5 2455 B5 2479 B5 2505 B6 2566 D1 2614 C5 2633 C5 2716 C1 2749 A2 2842 C6 2884 A4 3012 B4 3035 B4 3067 B1 3088 B3 3303 D1 3326 C2 3362 C4 3711 B1 4360 C4 5990 B5
2003 C1 2026 B4 2048 C1 2067 D1 2086 B3 2255 A7 2361 B4 2395 C3 2419 B6 2438 B5 2456 B5 2480 B5 2506 B6 2580 A2 2615 C5 2634 C5 2718 A2 2750 A2 2844 C6 2885 A5 3013 C3 3036 B4 3068 B1 3089 B2 3304 D2 3327 C1 3363 C4 3714 A2 4361 C4 5991 B5
2004 B2 2028 A3 2049 C1 2068 B2 2087 B1 2261 A7 2363 C4 2397 C3 2420 B5 2439 B5 2461 B5 2481 B5 2507 B6 2581 A3 2616 C5 2635 C5 2719 A2 2811 C6 2845 C6 2886 A5 3020 A3 3037 B1 3069 B1 3091 B3 3305 D2 3328 D2 3365 C4 3715 A2 4362 B4 5994 A7
3366 B4 3716 B2 4363 B4 5996 B5
3367 B4 3717 C2 4427 B6 5997 B5
3368 C4 3718 B2 4428 B6 5998 B5
3369 C4 3719 C2 4444 B6 6001 B3
3370 C3 3720 C2 4445 B6 6020 A3
3373 C4 3721 B2 4446 B5 6021 B4
3389 B3 3722 C2 4580 A3 6073 A3
3390 C3 3725 C2 4581 A3 6074 B3
3391 C3 3726 A2 4582 A3 6075 B3
3392 C3 3727 A2 4583 A3 6076 A3
3393 C3 3728 B3 4584 A3 6259 A7
3394 B2 3735 A1 4585 A3 6262 A7
3415 C1 3736 A1 4586 A3 6270 A7
3416 B6 3737 A1 4587 A3 6310 D1
3417 B6 3738 A1 4588 A3 6311 D1
3418 B5 3739 B2 4589 A3 6323 C2
3422 B6 3740 B2 4590 A3 6324 C2
3423 B5 3741 B2 4591 A3 6328 D2
3424 B5 3742 B2 4592 A3 6329 D2
3425 B5 3743 B2 4593 A3 6330 D1
3426 B5 3744 C1 4601 C5 6331 D2
3427 B6 3745 B2 4602 C5 6565 C2
3428 B5 3746 B2 4603 C5 6910 A3
3429 B5 3747 B2 4604 C5 6911 A3
3432 B5 3748 B2 4605 C5 7004 B4
3433 B5 3749 B2 4606 C5 7005 B2
3436 B5 3750 B2 4607 C5 7011 B3
3437 B5 3751 C1 4608 C5 7015 A3
3438 B5 3752 A2 4701 B2 7016 A3
3439 B5 3753 A2 4702 B2 7017 A4
3440 B5 3808 C7 4703 B1 7018 A3
3442 C5 3809 C7 4704 B2 7019 A4
3443 B5 3810 C7 4705 B2 7070 B3
3444 B6 3815 C6 4706 B2 7075 B3
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3448 B5 3817 C6 4708 B3 7260 A7
3460 B5 3819 C6 4709 B3 7271 A7
3501 B7 3822 C7 4710 B2 7272 A7
3502 B7 3823 C7 4711 B2 7316 C3
3503 B7 3827 C6 4716 B3 7320 C2
3531 B5 3828 C7 4720 A1 7325 C2
3532 B4 3829 C6 4836 C6 7360 C4
3533 B4 3832 C7 4838 C6 7416 B5
3534 B4 3833 C6 4871 A6 7531 B5
3536 A5 3836 C6 4872 A6 7532 B4
3538 A4 3837 C6 4887 A4 7579 C1
3539 A4 3838 C6 4888 A6 7580 A3
3540 A5 3839 C6 5001 B2 7581 A3
3541 A5 3876 A4 5002 B2 7582 A3
3542 A5 3877 A4 5007 B4 7583 A3
3543 A5 3879 A4 5008 B4 7584 A3
3544 A5 3883 A4 5010 B4 7585 A3
3545 A4 3885 A5 5060 B2 7601 C5
3546 A5 3886 A4 5066 C1 7606 C5
3547 A5 3887 A4 5067 D1 7607 C5
3548 A5 3910 A3 5070 B3 7702 C2
3549 A5 3911 A3 5071 B3 7703 B2
3550 A4 3955 A5 5251 A7 7707 B2
3551 A5 3958 A5 5252 A7 7708 B1
3552 A5 4002 C3 5257 A7 7740 B2
3553 A5 4004 C3 5258 A7 7801 C6
3579 C1 4005 C3 5259 A7 7806 C7
3580 A3 4006 C3 5304 D2 7807 C7
3581 A3 4007 C3 5309 C2 7809 C6
3601 C5 4008 B4 5321 C2 7810 C6
3612 C5 4011 C4 5324 C2 7872 A6
3613 C5 4012 C4 5339 B2 7887 A4
3614 C5 4015 A3 5340 C2 7910 A3
3615 C5 4016 A4 5360 B4 7920 A4
3616 C5 4017 C1 5370 B4 7953 A6
3617 C5 4018 C1 5371 B4 7954 A5
3618 C5 4019 C1 5372 B4 7955 A5
3619 C5 4020 C1 5580 A3 7992 A7
3620 C5 4022 C2 5601 C5 7995 B6
3625 C5 4023 C3 5607 C5
3626 C5 4085 B1 5720 A1
3627 C5 4086 B1 5721 A2
3628 C5 4251 A7 5722 A2
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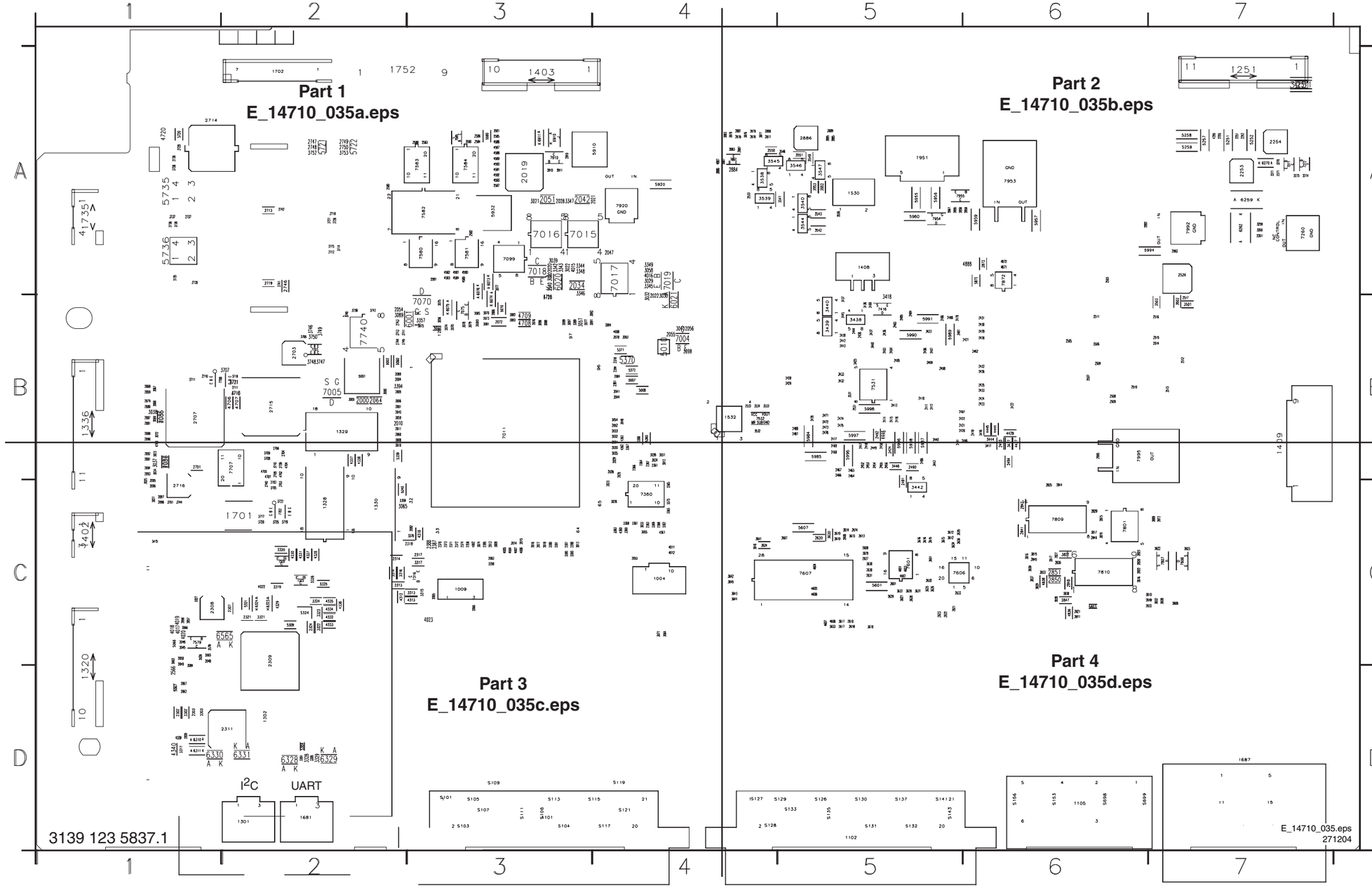
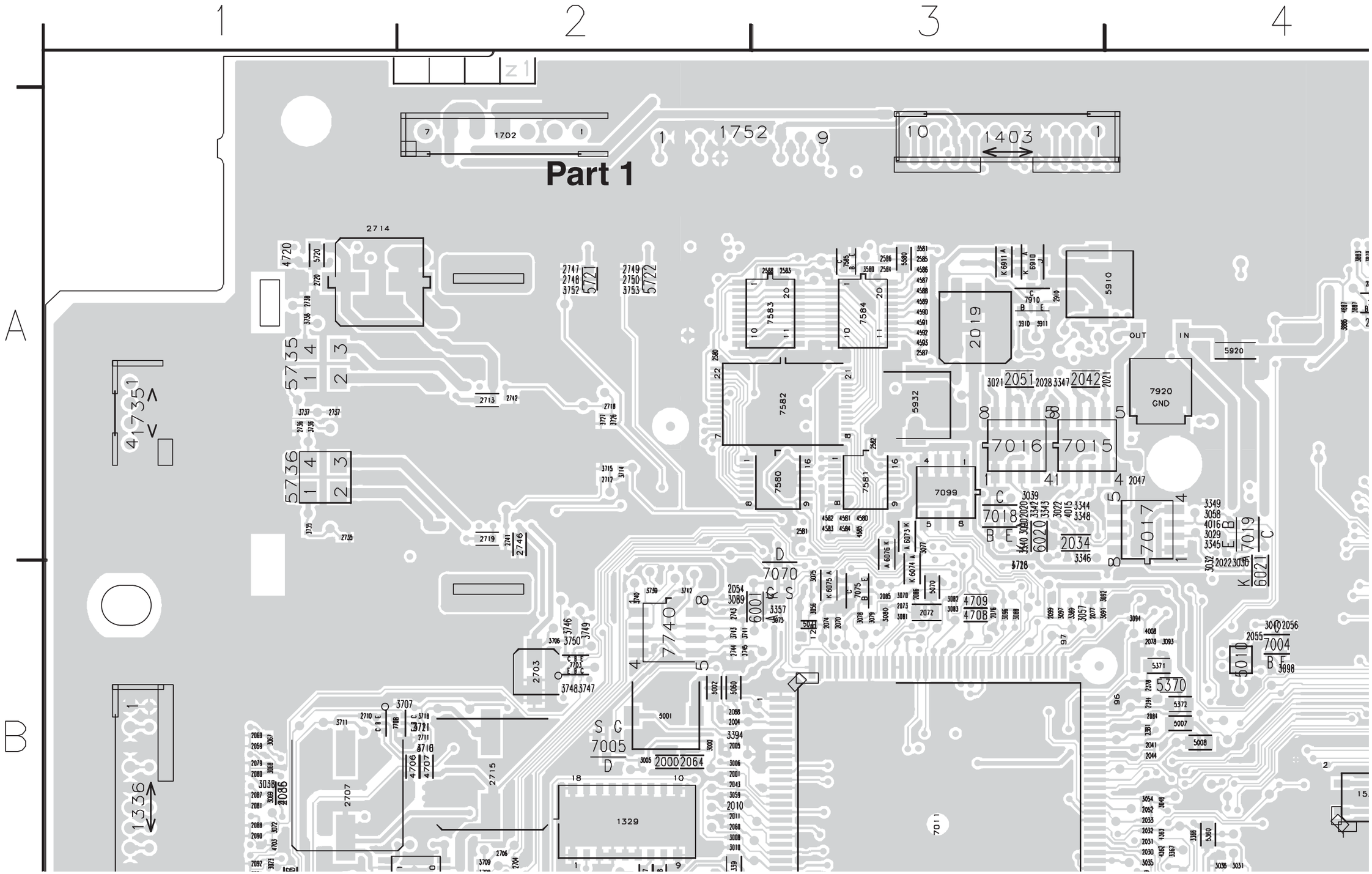
3632 C5 4318 C3 5872 A6



Layout Small Signal Panel (Bottom Side Part 1)



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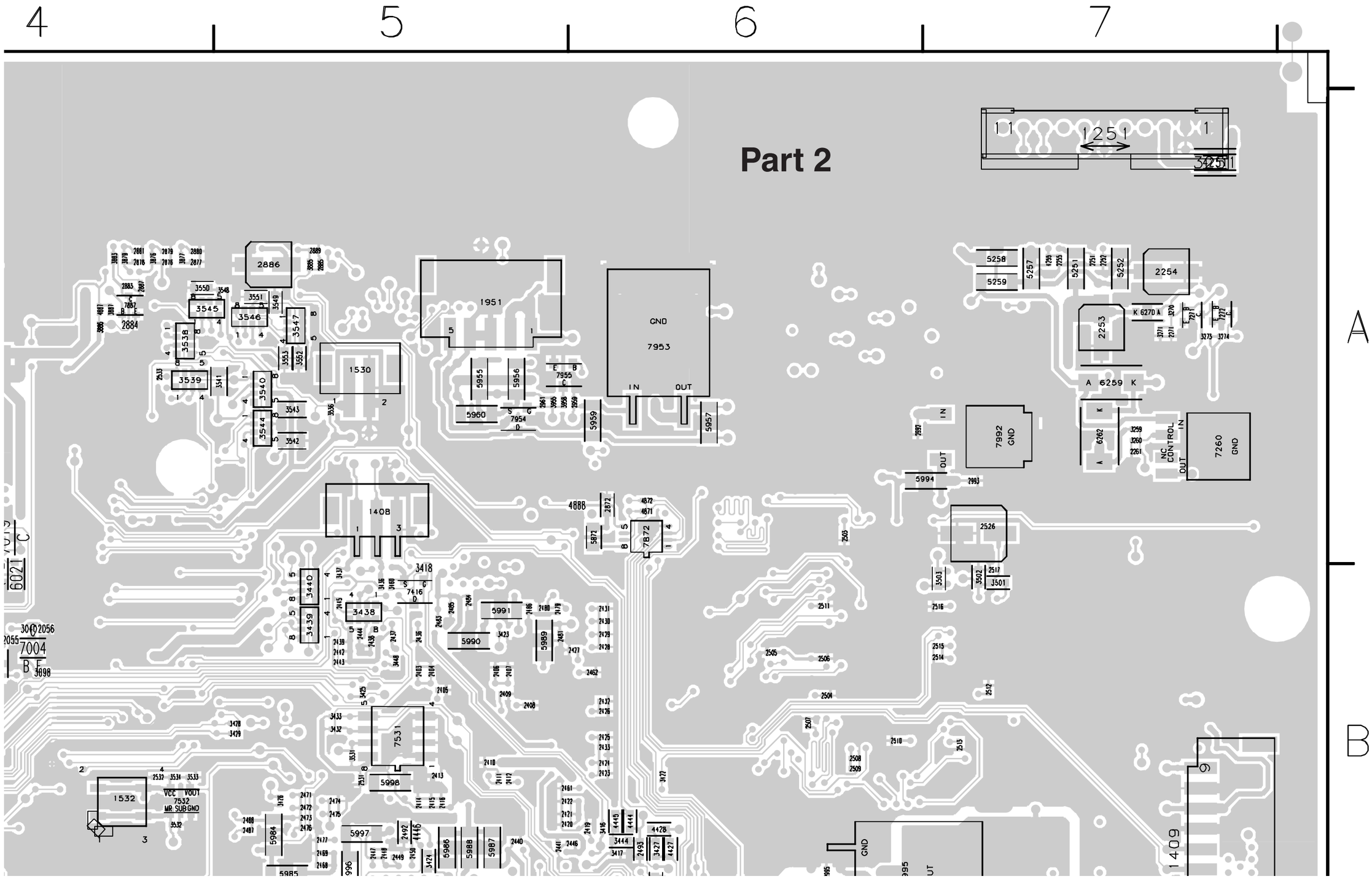
171104

Layout Small Signal Panel (Bottom Side Part 2)



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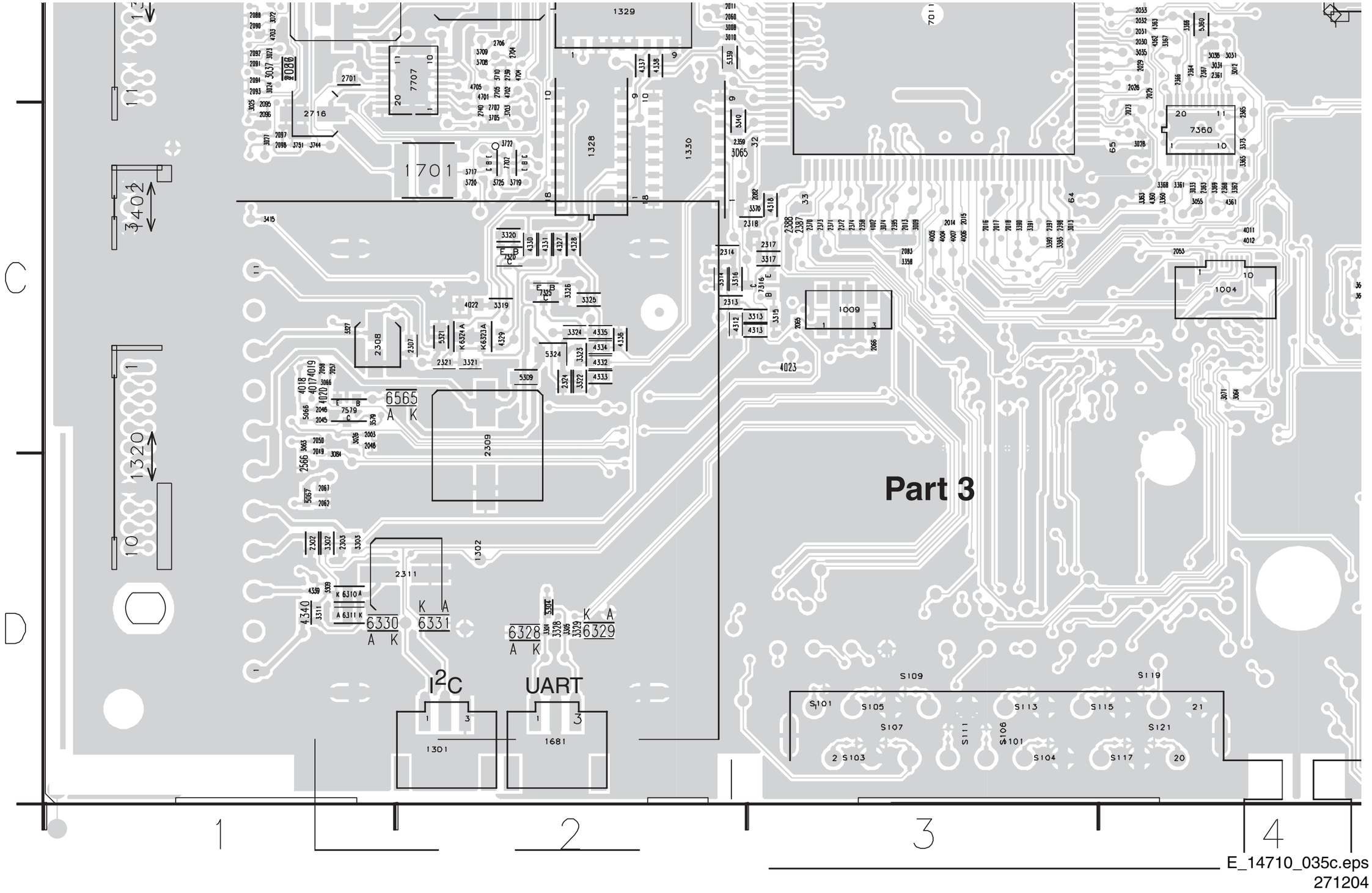
Layout Small Signal Panel (Bottom Side Part 3)



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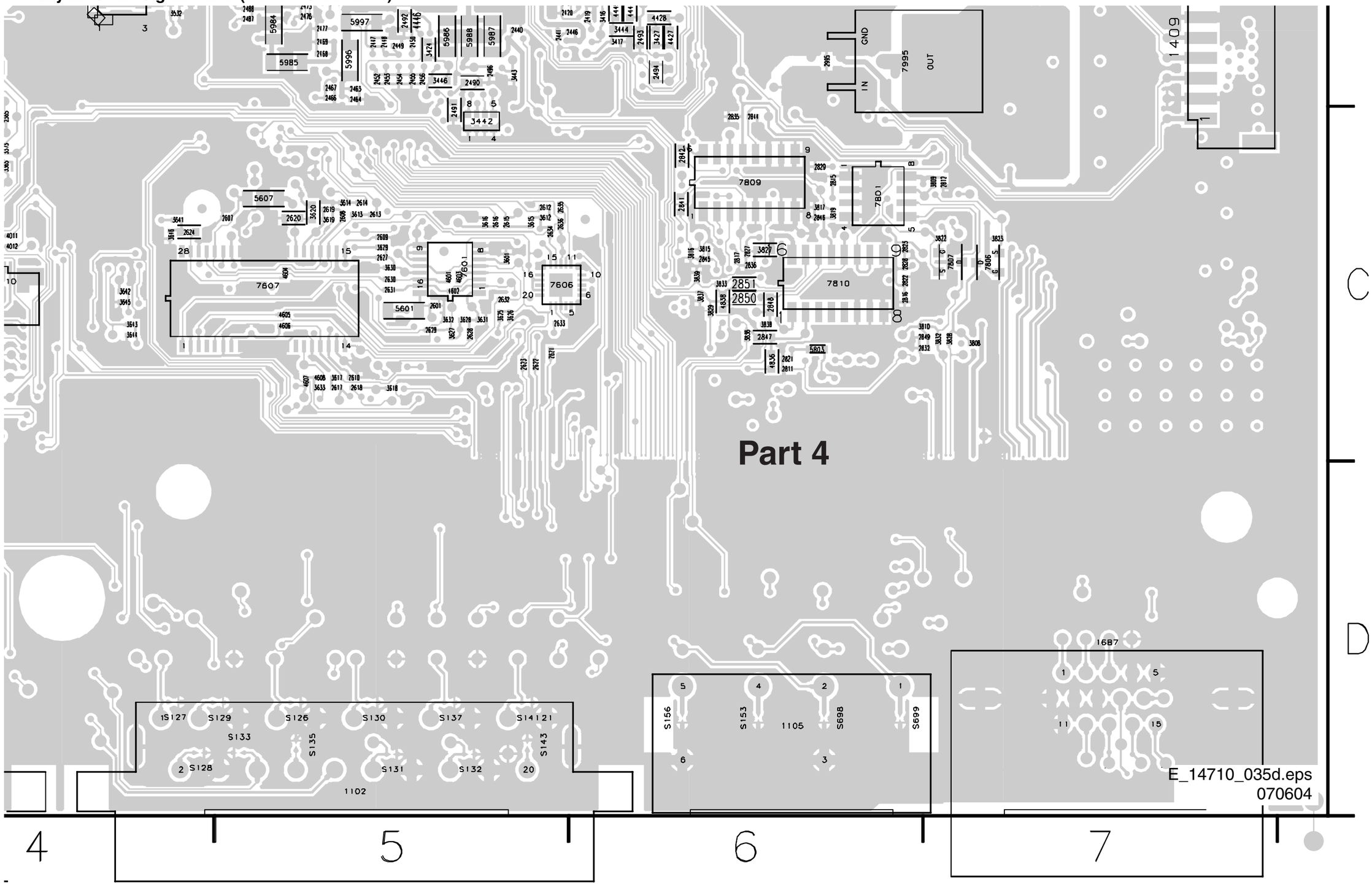
271204

Layout Small Signal Panel (Bottom Side Part 4)



PSU (30-32”): Mains Filter and Standby

AS1 MAINS FILTER + STANDBY **AS1**

MAINS FILTER

MAINS INPUT
95-264Vac

COLD GROUND

HOT

COLD

400V_HOT

25V_HOT

TO 1307
SA2
AUDIO-STANDBY

TO 1305
SA2
AUDIO-STANDBY
COLD

TO 1306
SA2
AUDIO-STANDBY

3104 313 6009.5

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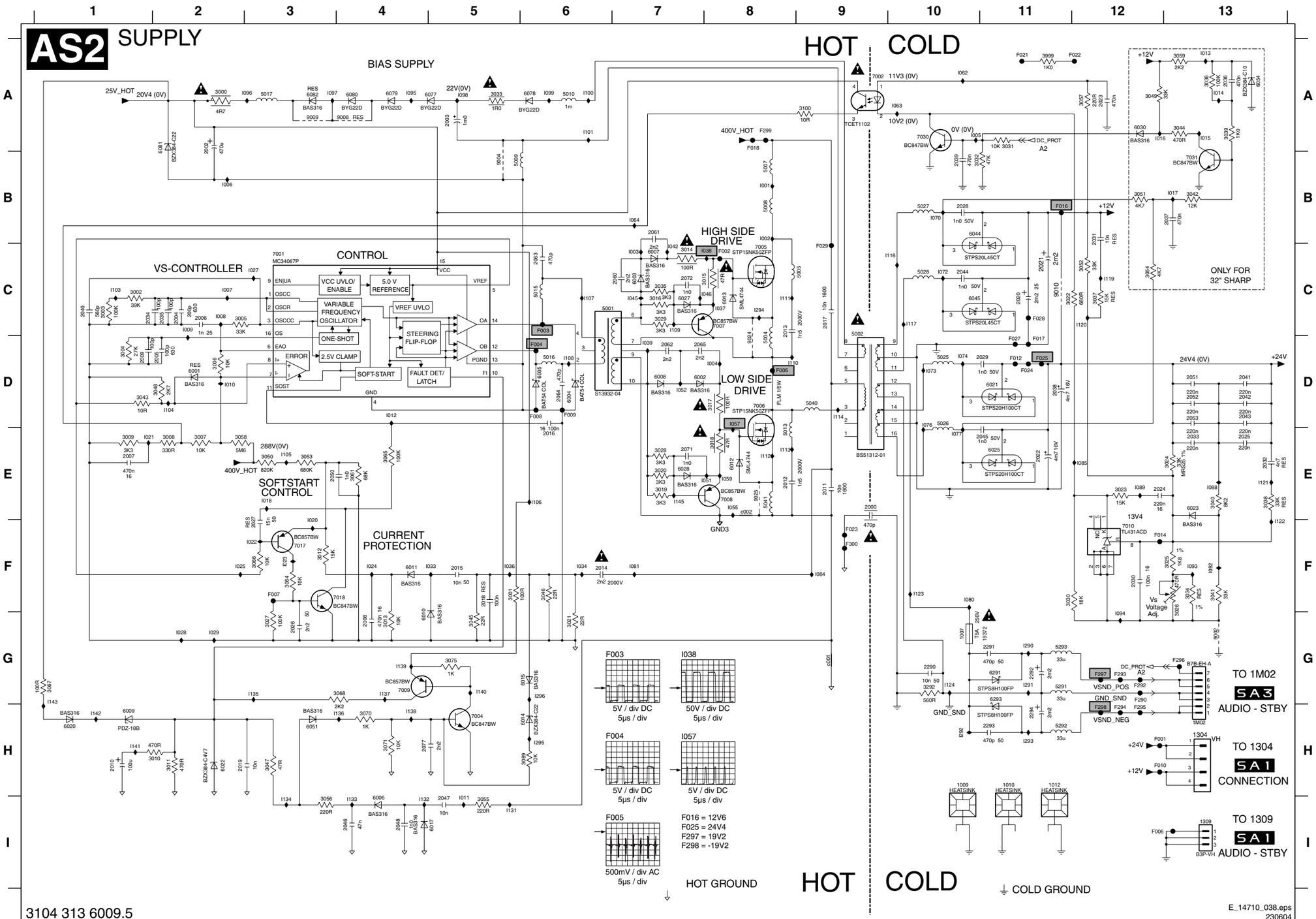
230604

1000 D2	I411 C4	
1001 D4	I412 C5	
1011 E5	I413 C8	
1305 F7	I414 B13	
1306 F2	I415 C6	
1307 B13	I416 C4	
1308 C1	I417 B13	
1400 C2	I418 C12	
1401 F3	I419 D2	
1402 D3	I420 D12	
1403 D3	I421 E11	
1450 C8	I422 E11	
2400 C2	I423 E10	
2401 C4	I424 E7	
2404 C3	I425 E10	
2406 C5	I426 E10	
2407 C4	I427 E10	
2408 C6	I428 E10	
2503 E6	I429 D2	
2802 E10	I430 D4	
2803 C11	I431 D3	
2804 C10	I432 D5	
2806 F10	I442 B6	
2808 E11	I444 B6	
2809 E12	I445 C6	
2810 D12	I455 D4	
2815 C11	I456 E7	
2816 D12	I810 B10	
3101 C12	I811 B11	
3400 C3	I812 B11	
3401 C1	I813 C10	
3402 C2	I814 E9	
3403 D2	I815 E9	
3404 D4	I816 E9	
3405 D3	I817 C11	
3450 B6	I820 F9	
3451 C6	I824 E12	
3800 E9	I825 E12	
3802 E10	I826 E12	
3803 E11	I828 E9	
3804 E9		
3805 E12		
3806 E9		
3807 E9		
3810 B10		
5401 C3		
5402 C5		
5403 B5		
5804 E11		
6154 C12		
6155 C12		
6460 E8		
6461 D8		
6506 E6		
6807 C10		
6808 E9		
6809 D9		
7805 D10		
7806 E11		
9001 C5		
9003 C5		
9005 C6		
9806 E9		
9808 C12		
9810 D10		
9811 D12		
9812 E11		
9813 C12		
9814 C12		
F410 B2		
F411 B2		
F412 C1		
F413 C1		
F414 C2		
F415 C1		
F416 C2		
F417 C2		
F418 C1		
F419 C2		
F420 F7		
F421 F8		
F422 B10		
F423 B10		
F424 F2		
F425 F2		
F426 F2		
F427 F3		
F428 F4		
I410 C3		

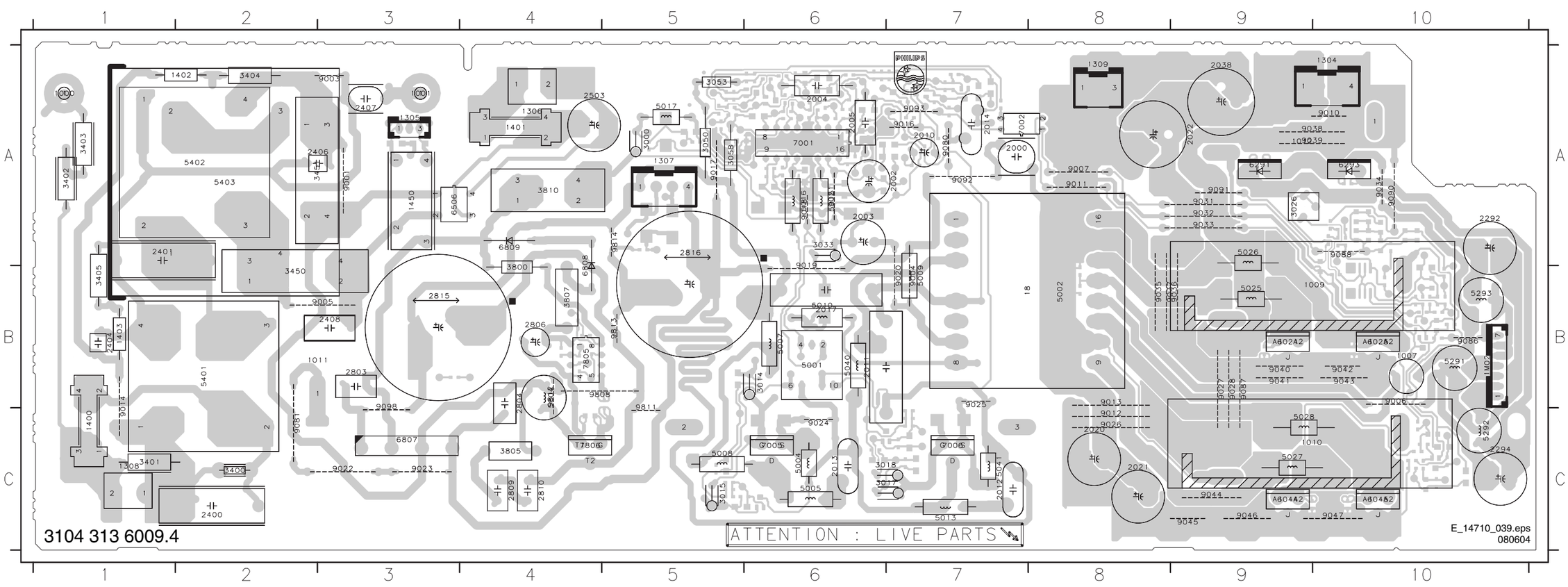
PSU (30-32”): Supply



1007 G10	3043 D1	F010 H12	I137 G4	
1009 H10	3044 A13	F012 D11	I138 H4	
1010 H11	3045 G5	F014 F12	I139 G4	
1012 H11	3046 F6	F016 B11	I140 G5	
1304 H13	3047 H3	F017 D11	I141 H1	
1309 I13	3048 D2	F018 A8	I142 H1	
1M02 H13	3049 A12	F021 A11	I143 G1	
2000 E9	3050 E3	F022 A12	I145 E7	
2002 A2	3051 B12	F023 F9	I290 G11	
2003 A5	3052 C12	F024 D11	I291 G11	
2004 C2	3053 E3	F025 D11	I292 H10	
2005 D2	3054 C12	F027 D11	I293 H11	
2006 C2	3055 I5	F028 C11	I294 C8	
2007 E1	3056 I3	F029 C9	I295 H6	
2008 G4	3057 A12	F290 G12	I296 G6	
2009 D1	3058 E2	F292 G12	c001 G9	
2010 H1	3059 A13	F293 G12	c002 E8	
2011 E9	3061 E4	F294 H12		
2012 E8	3064 F3	F295 H12		
2013 C8	3065 E4	F296 G13		
2014 F6	3066 F3	F297 G12		
2015 F5	3067 G1	F298 H12		
2016 E6	3068 G4	F299 A8		
2017 C9	3070 H4	F300 F9		
2018 F5	3071 H4	I001 B8		
2019 H2	3075 G5	I002 B8		
2020 C11	3089 H6	I003 C7		
2021 C11	3100 A9	I004 D8		
2022 E11	3292 G10	I005 A10		
2023 A12	3999 A11	I006 B2		
2024 E12	5001 C6	I007 C2		
2025 E13	5002 D9	I008 C2		
2026 G3	5004 D8	I009 C2		
2027 F3	5005 C9	I010 D2		
2028 B10	5007 B8	I011 I5		
2029 D11	5008 B8	I012 D4		
2030 F12	5009 B5	I013 A13		
2031 B12	5010 A6	I014 A13		
2032 E13	5013 E8	I015 A13		
2033 E13	5015 C6	I016 A12		
2034 C1	5016 D6	I017 B13		
2035 C2	5017 A3	I018 E3		
2036 A13	5025 D10	I020 F3		
2037 B13	5026 D10	I021 E1		
2038 D11	5027 B10	I022 F3		
2039 B10	5028 C10	I023 F3		
2040 C1	5040 D9	I024 F4		
2041 D13	5041 E8	I025 F2		
2042 D13	5291 G11	I027 C3		
2043 D13	5292 H11	I028 G2		
2044 C10	5293 G11	I029 G2		
2045 E11	6001 D2	I033 F5		
2046 I4	6002 D7	I034 F6		
2047 I5	6003 C7	I036 F5		
2048 I4	6004 D6	I037 C8		
2050 E3	6005 D6	I038 C8		
2051 D13	6006 I4	I039 D7		
2052 D13	6007 C7	I042 C7		
2053 D13	6008 D7	I045 C7		
2060 C7	6009 H1	I046 C8		
2061 B7	6010 G4	I051 E8		
2062 D7	6011 F4	I052 D7		
2063 C6	6012 E8	I055 E8		
2064 D6	6013 C8	I057 D8		
2065 D7	6014 H6	I059 E8		
2071 E7	6015 G6	I062 A10		
2072 C7	6017 I5	I063 A10		
2077 H4	6020 H1	I064 B7		
2290 G10	6021 D11	I070 B10		
2291 G11	6022 H2	I072 C10		
2292 G11	6023 E13	I073 D10		
2293 H11	6025 E11	I074 D10		
2294 H11	6027 C7	I076 D10		
3000 A2	6028 E7	I077 E10		
3001 F5	6030 A12	I080 F10		
3002 C1	6044 B10	I081 F7		
3003 C1	6045 C10	I084 F9		
3004 D1	6051 H3	I085 E12		
3005 C2	6054 A13	I088 E13		
3006 D2	6077 A5	I089 E12		
3007 E2	6078 A6	I092 F13		
3008 E2	6079 A4	I093 F13		
3009 E1	6080 A4	I094 G12		
3010 H2	6081 A2	I095 A4		
3011 H2	6082 A3	I096 A3		
3012 F3	6291 G11	I097 A3		
3013 G4	6293 G11	I098 A5		
3014 C7	7001 C3	I099 A6		
3015 C8	7002 A9	I100 A6		
3016 C7	7004 H5	I101 A6		
3017 D8	7005 C8	I103 C1		
3018 E8	7006 D8	I104 D2		
3019 E7	7007 C8	I105 E3		
3020 E7	7008 E8	I106 E6		
3021 G6	7009 G4	I107 C6		
3022 C11	7010 F12	I108 D6		
3023 E12	7017 F3	I109 C7		
3024 E13	7018 F3	I110 D8		
3025 F13	7030 A10	I111 C8		
3026 G13	7031 B13	I112 E8		
3027 G3	9002 G13	I113 E8		
3028 E7	9004 B5	I114 D9		
3029 C7	9008 A4	I116 C10		
3030 F11	9009 A3	I117 C10		
3031 A11	9010 C11	I119 C12		
3032 B10	9024 D8	I120 C12		
3033 A5	9025 E8	I121 E13		
3034 F13	F001 H12	I122 F13		
3035 C7	F002 C8	I123 F10		
3036 A13	F003 C6	I124 G10		
3037 C12	F004 D6	I131 I5		
3038 E13	F005 D8	I132 I4		
3039 A13	F006 I12	I133 I4		
3040 E13	F007 F3	I134 I3		
3041 F13	F008 D6	I135 G3		
3042 B13	F009 D6	I136 H4		

Layout PSU (30-32") (Top Side)

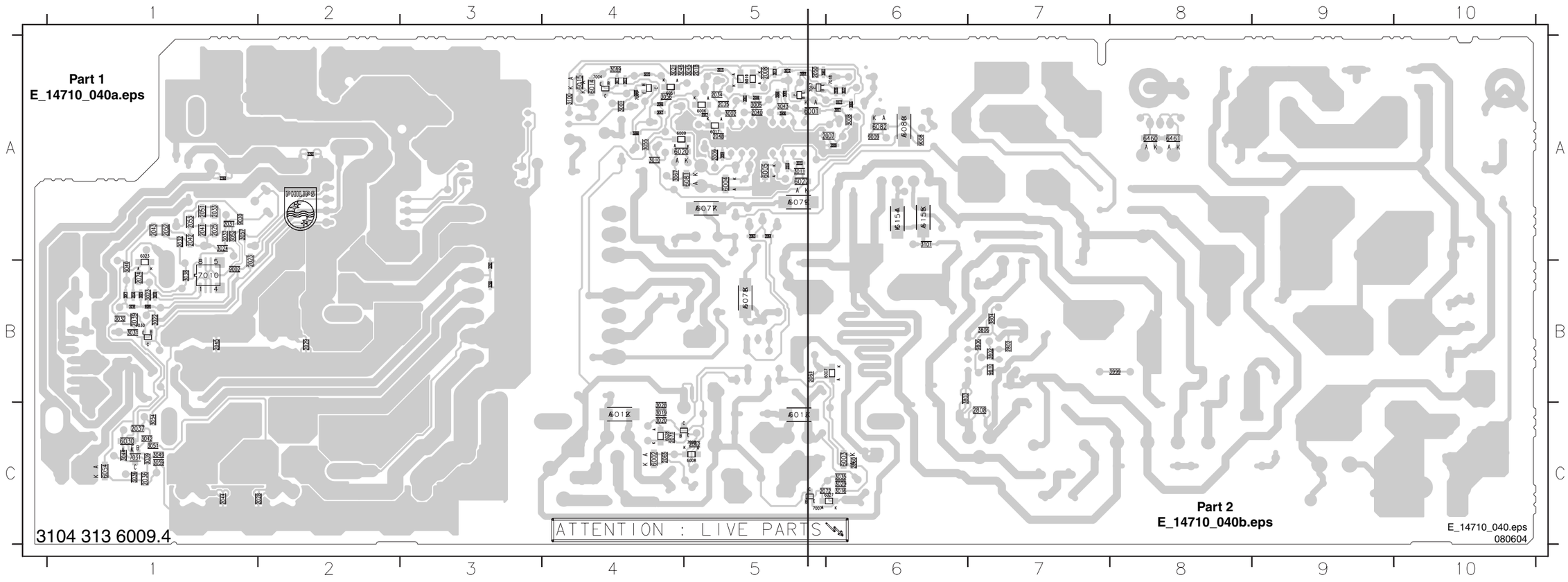
1000 A1	1304 A10	1401 A4	2003 A6	2014 A7	2294 C10	2503 A4	2816 A5	3033 A6	3403 A1	3807 B4	5008 C5	5025 B9	5292 C10	6025 B10	6808 A4	7806 C4	9010 A10	9018 A6	9025 B7	9034 A10	9041 B9	9080 A7	9092 A7	9814 A5
1001 A3	1305 A3	1402 A2	2004 A6	2017 B6	2400 C2	2803 B3	3000 A5	3050 A5	3404 A2	3810 A4	5009 B7	5026 A9	5293 B10	6044 C10	6809 A4	9001 A3	9011 A8	9019 A6	9026 C8	9035 B8	9042 B10	9081 C2	9093 A7	
1007 B10	1306 A4	1403 B1	2005 A6	2020 C8	2401 B1	2804 B4	3014 B6	3053 A5	3405 B1	5001 B6	5010 B6	5027 C9	5401 B2	6045 C10	7001 A6	9003 A3	9012 C8	9020 B7	9027 B9	9036 B9	9043 B10	9086 B10	9098 B3	
1009 B9	1307 A5	1450 A3	2010 A7	2021 C8	2404 B1	2806 B4	3015 C5	3058 A5	3450 A2	5002 A7	5013 C7	5028 C9	5402 A1	6291 A9	7002 A8	9004 A7	9013 B8	9021 A6	9028 B9	9037 B8	9044 C9	9087 B9	9808 B5	
1010 C9	1308 C1	1M02 B10	2011 B7	2022 A8	2406 A3	2809 C4	3017 C7	3400 C2	3451 A3	5004 C6	5015 A6	5040 B6	5403 A3	6293 A10	7005 C6	9005 B3	9014 B1	9022 C3	9031 A9	9038 A9	9045 C9	9088 A10	9811 B5		
1011 C3	1309 A8	2000 A7	2012 C7	2038 A9	2407 A3	2810 C4	3018 C7	3401 C2	3800 A4	5005 C6	5016 A6	5041 C7	5804 B4	6506 A4	7006 C7	9006 C10	9016 A7	9023 C3	9032 A9	9039 A9	9046 C9	9090 A10	9812 B4	
1012 A9	1400 C1	2002 A7	2013 C6	2292 A10	2408 B3	2815 A3	3026 A9	3402 A1	3805 C4	5007 B6	5017 A5	5291 B10	6021 B9	6807 C3	7805 B4	9007 A8	9017 A5	9024 C6	9033 A9	9040 B9	9047 C10	9091 A9	9813 B5	



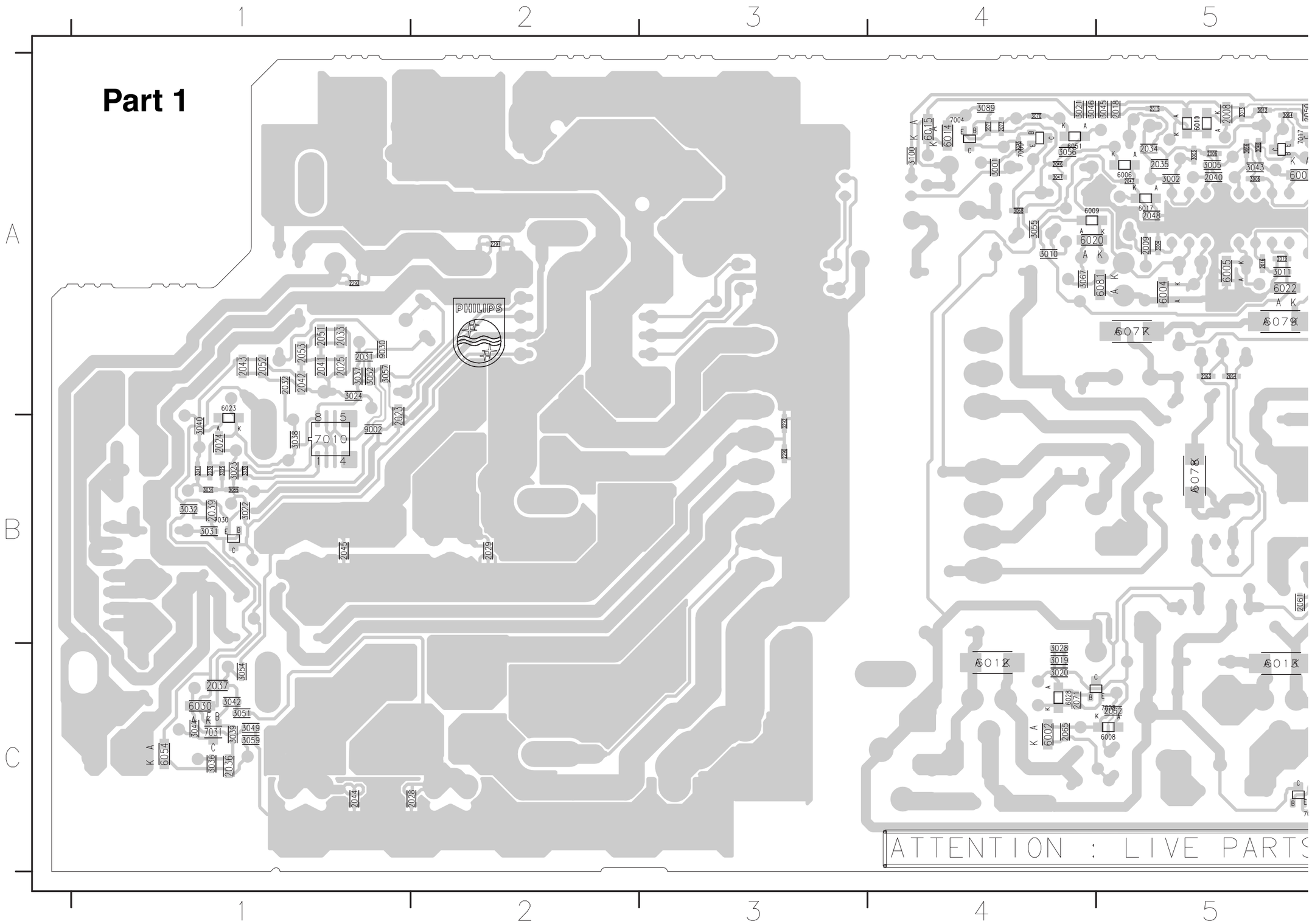
3104 313 6009.4

Layout PSU (30-32") (Overview Bottom Side)

2006	A5	2018	A5	2027	A6	2033	A1	2040	A5	2046	A4	2053	A1	2065	C4	2293	A1	3004	A5	3010	A4	3020	C4	3027	A6	3034	B1	3040	B1	3046	A4	3054	C1	3064	A5	3071	A4	3802	B7	6002	C4	6008	C5	6014	A4	6027	C6	6078	B5	6155	A6	7009	A4	9002	B1	9810	B7
2007	A6	2019	A5	2028	C2	2034	A5	2041	A1	2047	A5	2060	C6	2071	C4	2802	B7	3005	A5	3011	A5	3021	A4	3028	C4	3035	C6	3041	B1	3047	A4	3055	A4	3065	A6	3075	A4	3803	B6	6003	C6	6009	A4	6015	A4	6028	C4	6079	A5	6460	A8	7010	A1	9008	A6		
2008	A5	2023	B1	2029	B2	2035	A5	2042	A1	2048	A5	2061	B5	2072	C5	2808	C7	3006	A5	3012	A5	3022	B1	3029	C6	3036	C1	3042	C1	3048	A5	3056	A4	3066	A5	3089	A4	3804	B7	6004	A5	6010	A5	6017	A5	6030	C1	6080	A6	6461	A8	7017	A5	9009	A6		
2009	A5	2024	B1	2030	B1	2036	C1	2043	A1	2050	A5	2062	C5	2077	A4	3001	A4	3007	A6	3013	A5	3023	B1	3030	B1	3037	A1	3043	A5	3049	C1	3057	A1	3067	A4	3100	A4	3806	B7	6005	A5	6011	A5	6020	A4	6051	A4	6081	A4	7004	A4	7018	A6	9030	A1		
2015	A5	2025	A1	2031	A1	2037	C1	2044	C1	2051	A1	2063	A5	2290	B3	3002	A5	3008	A6	3016	C6	3024	A1	3031	B1	3038	B1	3044	C1	3051	C1	3059	C1	3068	A4	3101	A6	3999	B8	6006	A5	6012	B4	6022	A5	6054	C1	6082	A6	7007	C5	7030	B1	9085	B1		
2016	A5	2026	A6	2032	A1	2039	B1	2045	B1	2052	A1	2064	A5	2291	A2	3003	A5	3009	A6	3019	C4	3025	B1	3032	B1	3039	C1	3045	A5	3052	A1	3061	A5	3070	A4	3292	B3	6001	A5	6007	B6	6013	C5	6023	A1	6077	A5	6154	A6	7008	C5	7031	C1	9806	B7		



Layout PSU (30-32") (Part 1 Bottom Side)



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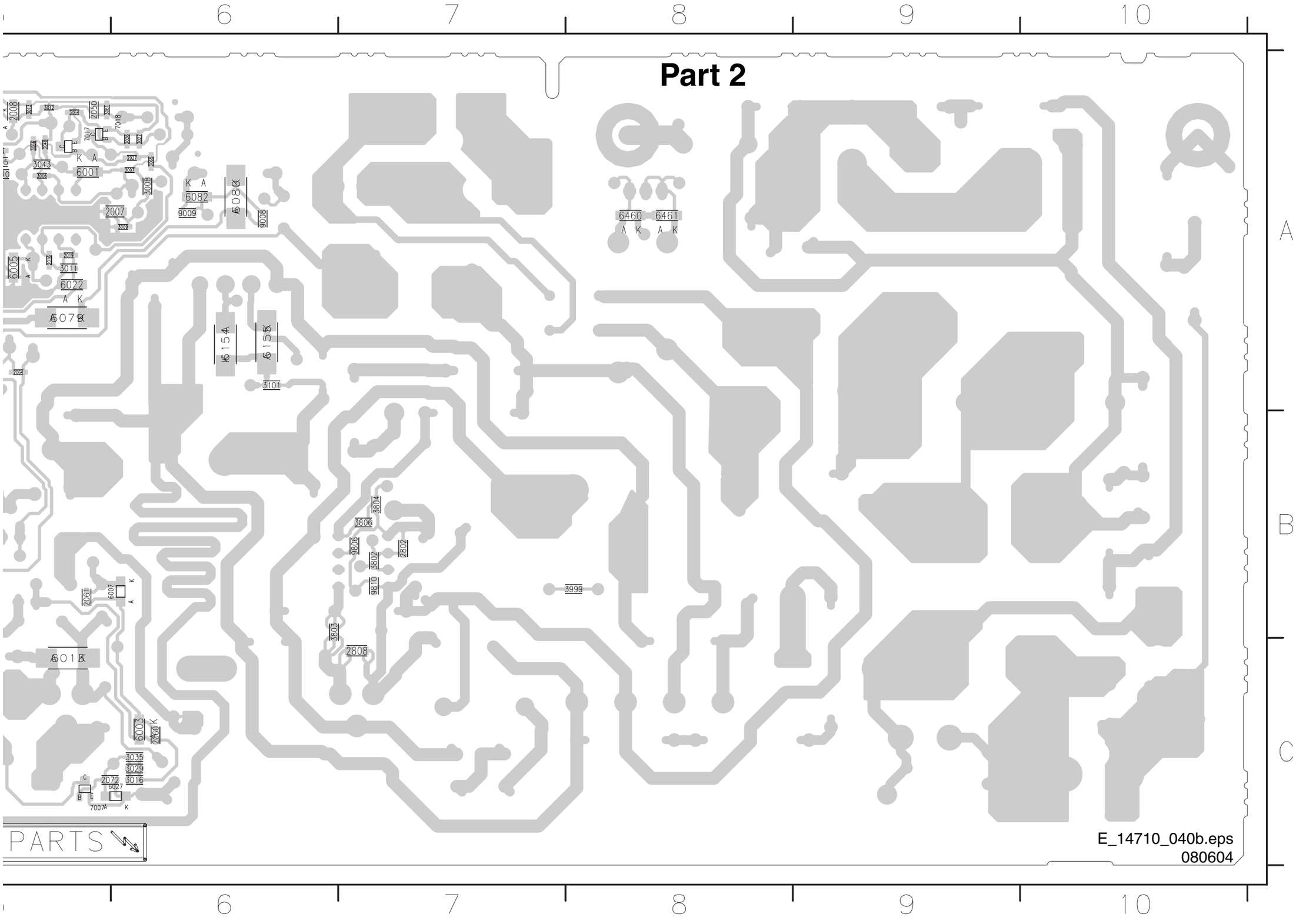
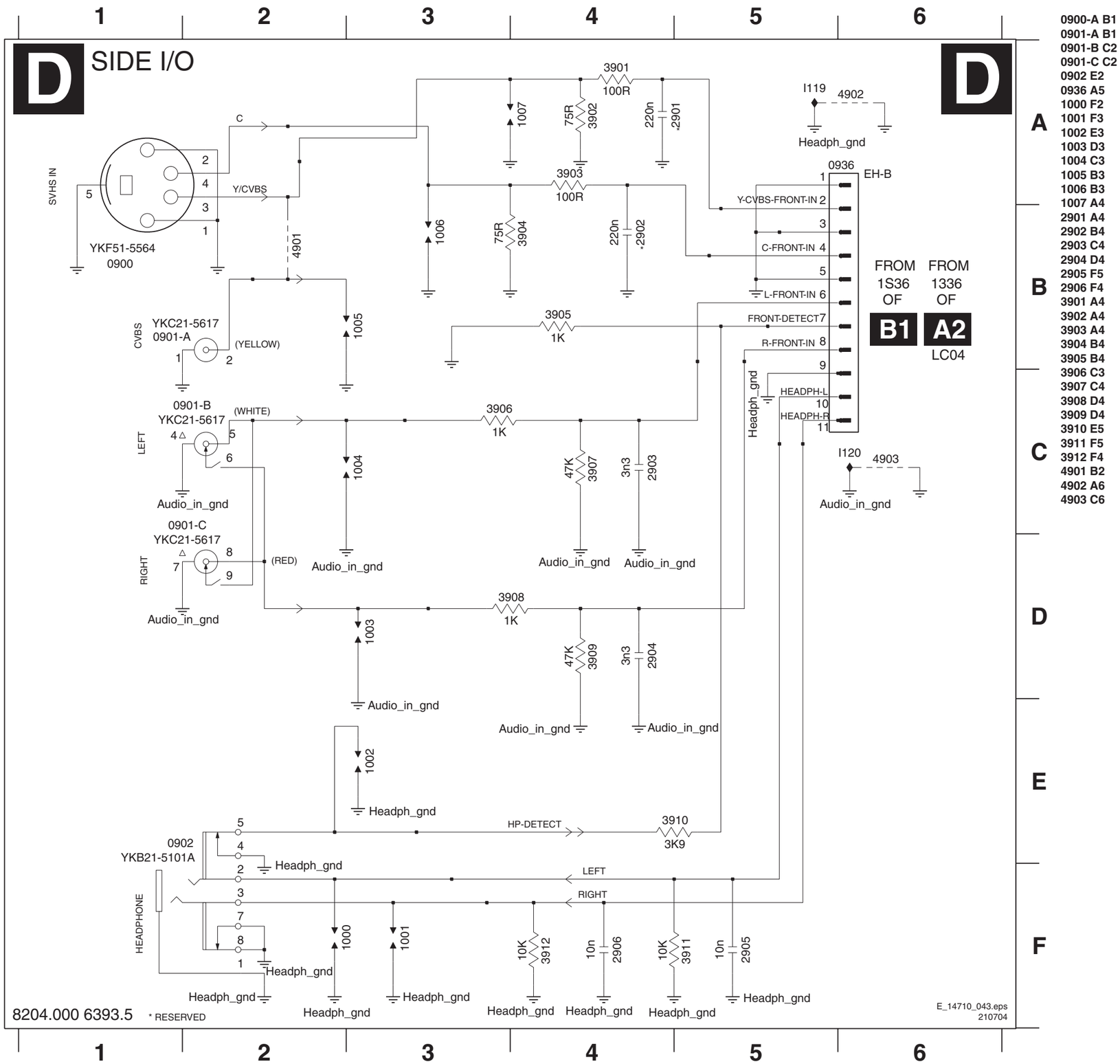
080604

Layout PSU (30-32”) (Part 2 Bottom Side)

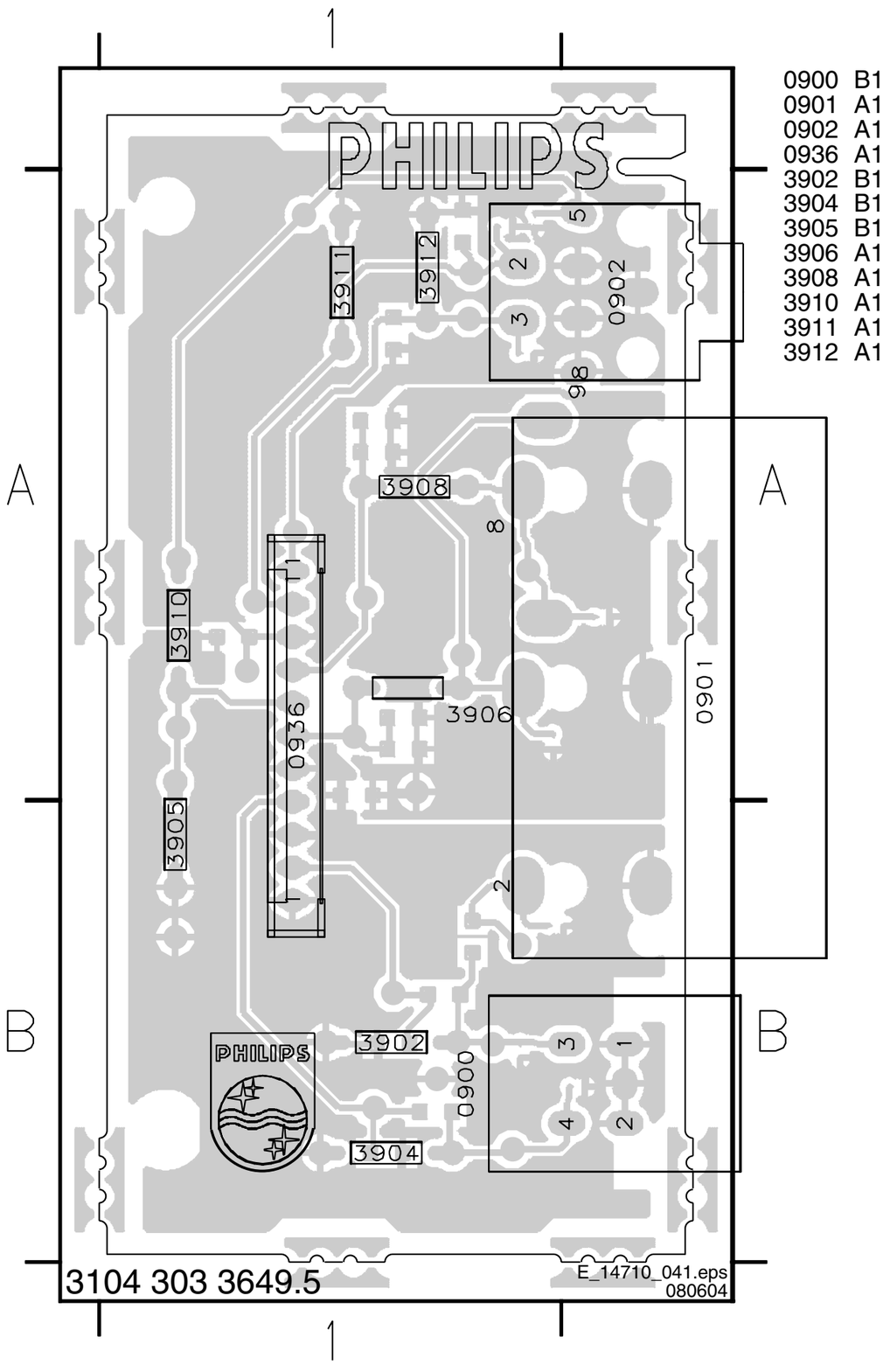


Side I/O Panel

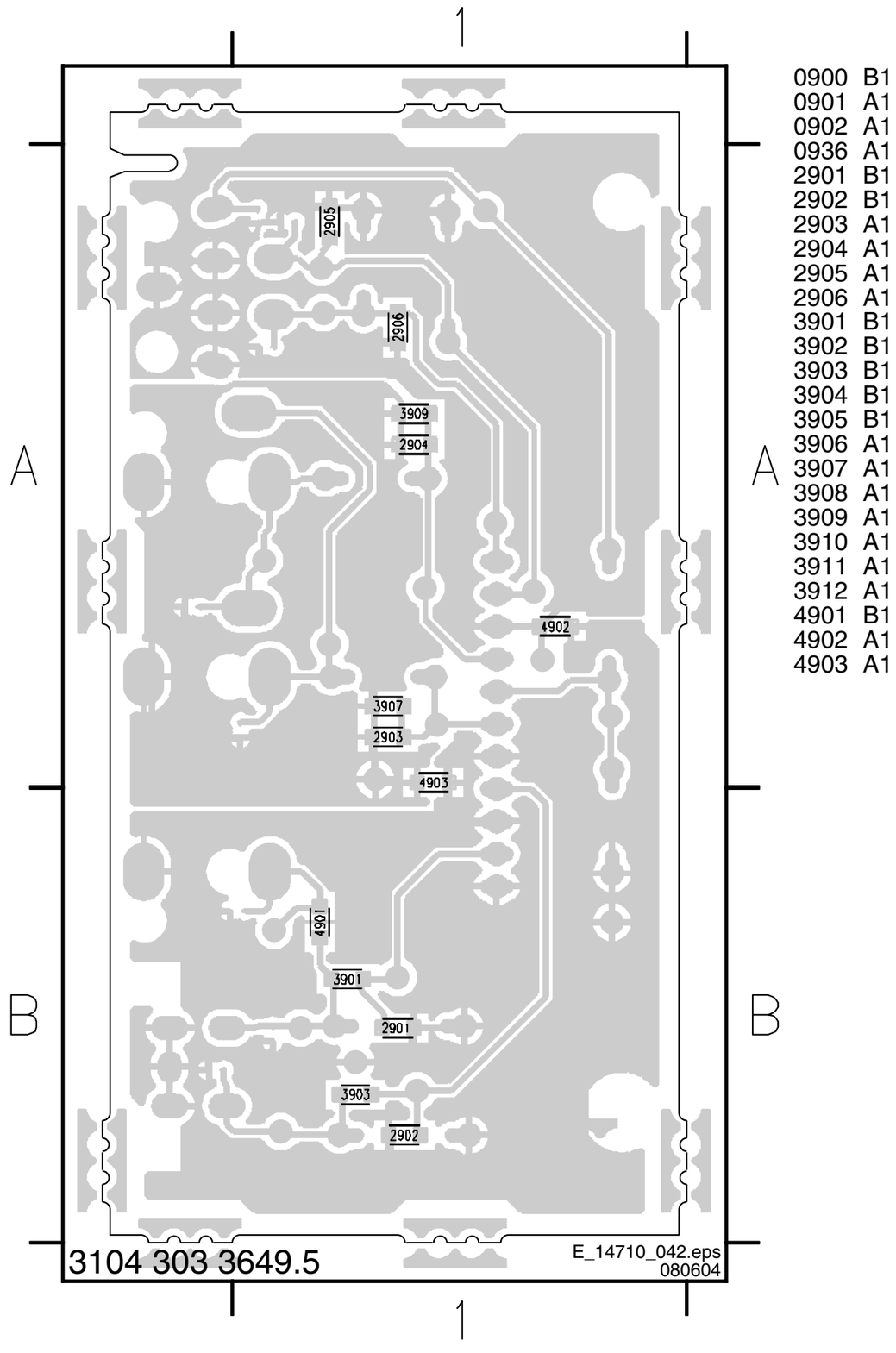


0900-A B1
0901-A B1
0901-B C2
0901-C C2
0902 E2
0936 A5
1000 F2
1001 F3
1002 E3
1003 D3
1004 C3
1005 B3
1006 B3
1007 A4
2901 A4
2902 B4
2903 C4
2904 D4
2905 F5
2906 F4
3901 A4
3902 A4
3903 A4
3904 B4
3905 B4
3906 C3
3907 C4
3908 D4
3909 D4
3910 E5
3911 F5
3912 F4
4901 B2
4902 A6
4903 C6

Layout Side I/O Panel (Top Side)

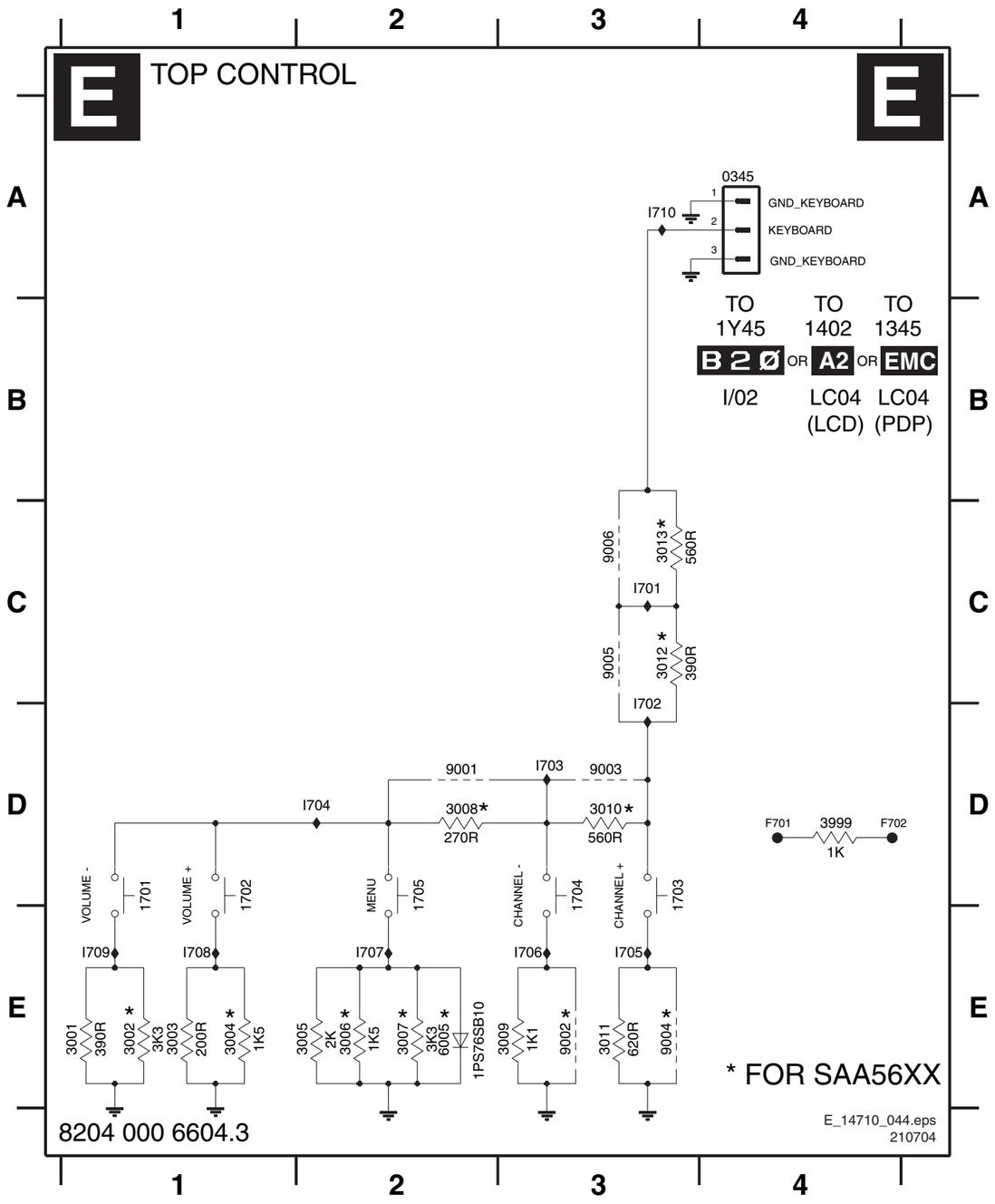


Layout Side I/O Panel (Bottom Side)



Top Control Panel

0345 A4 1704 D3 3003 E1 3007 E2 3011 E3 6005 E2 9004 E3 F702 D4 I704 D2 I708 E1
1701 D1 1705 D2 3004 E1 3008 D2 3012 C3 9001 D2 9005 C3 I701 C3 I705 E3 I709 E1
1702 D1 3001 E1 3005 E2 3009 E3 3013 C3 9002 E3 9006 C3 I702 D3 I706 E3 I710 A3
1703 D3 3002 E1 3006 E2 3010 D3 3999 D4 9003 D3 F701 D4 I703 D3 I707 E2

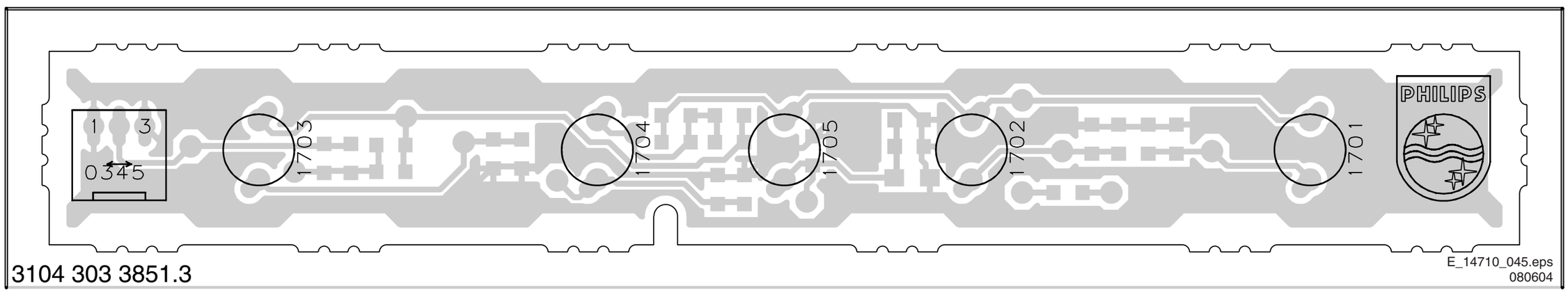


Personal Notes:

E_06532_012.eps
131004

Layout Top Control Panel (Top Side)

0345 1701 1702 1703 1704 1705

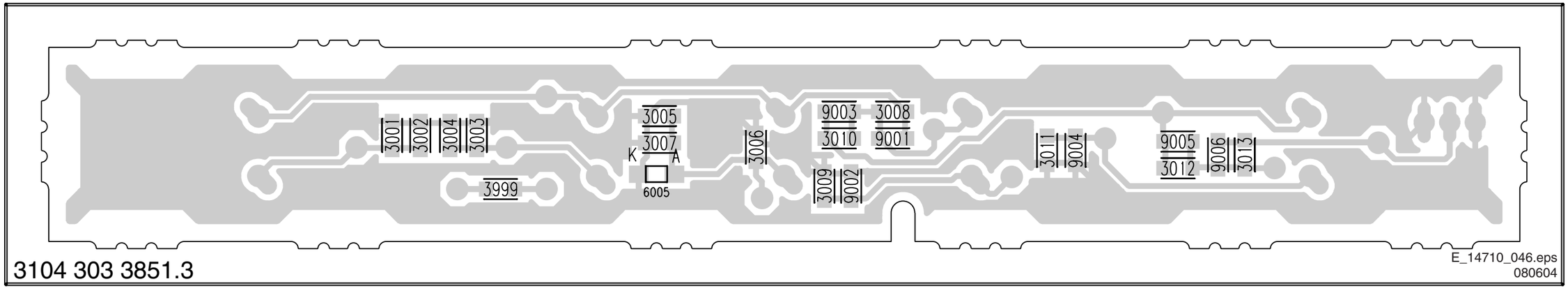


3104 303 3851.3

E_14710_045.eps
080604

Layout Top Control Panel (Top Side)

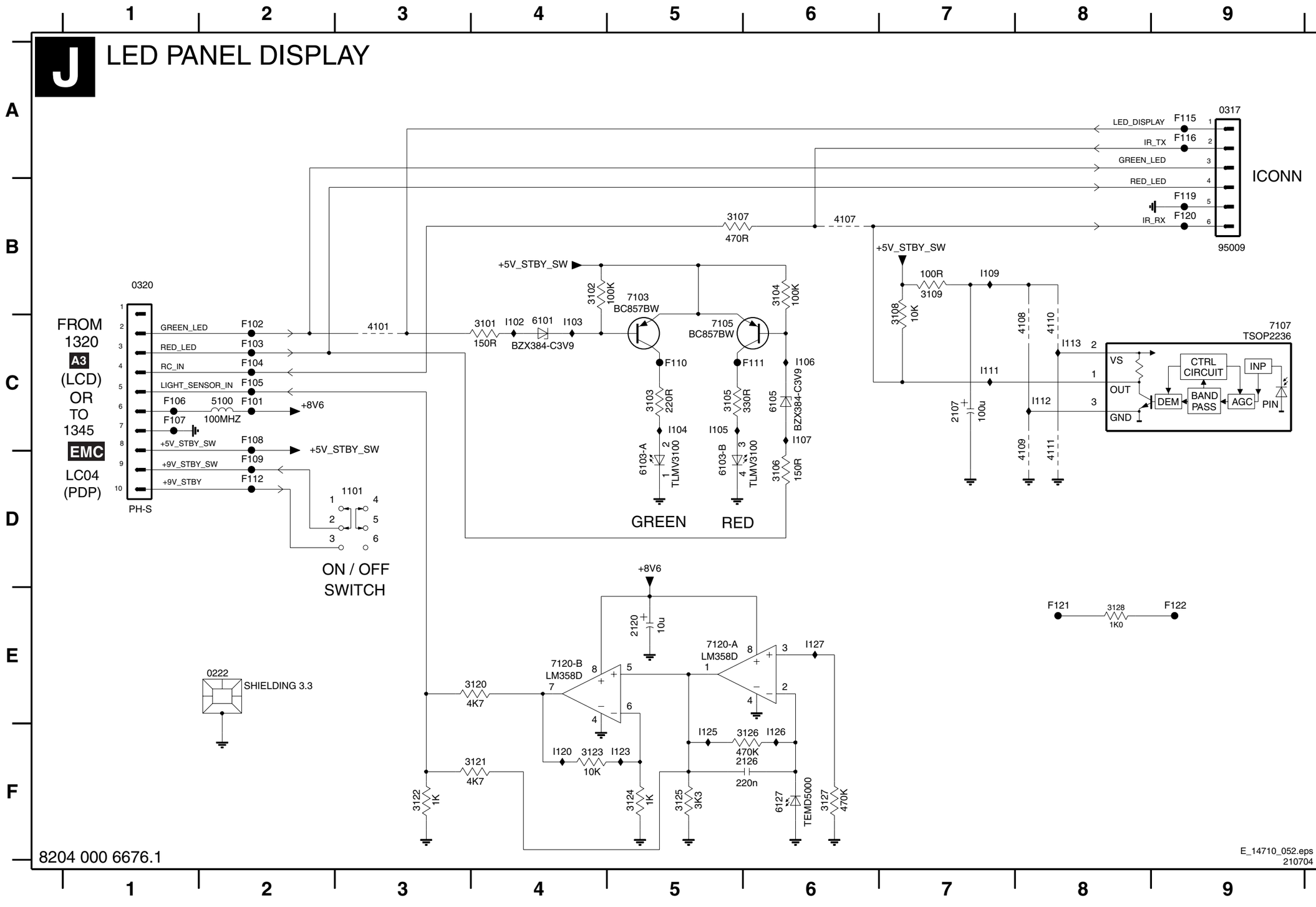
3001 3003 3005 3007 3009 3011 3013 6005 9002 9004 9006
3002 3004 3006 3008 3010 3012 3999 9001 9003 9005



3104 303 3851.3

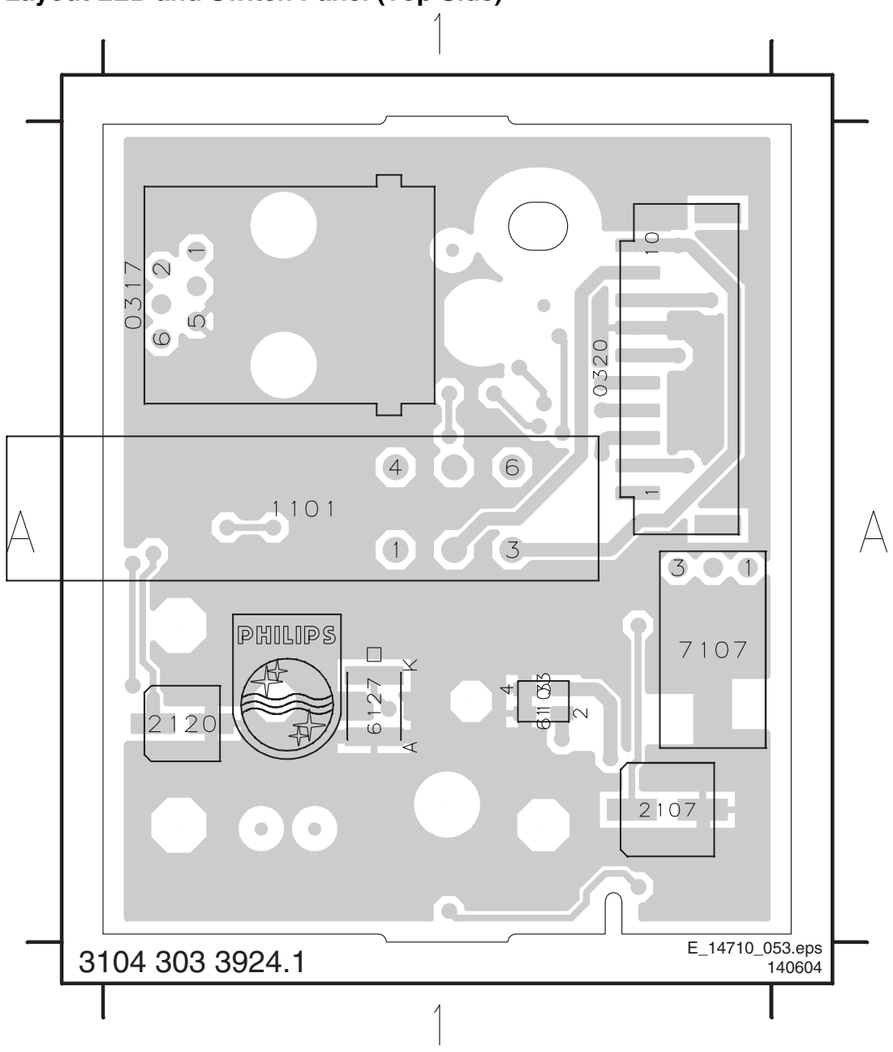
E_14710_046.eps
080604

LED and Switch Panel



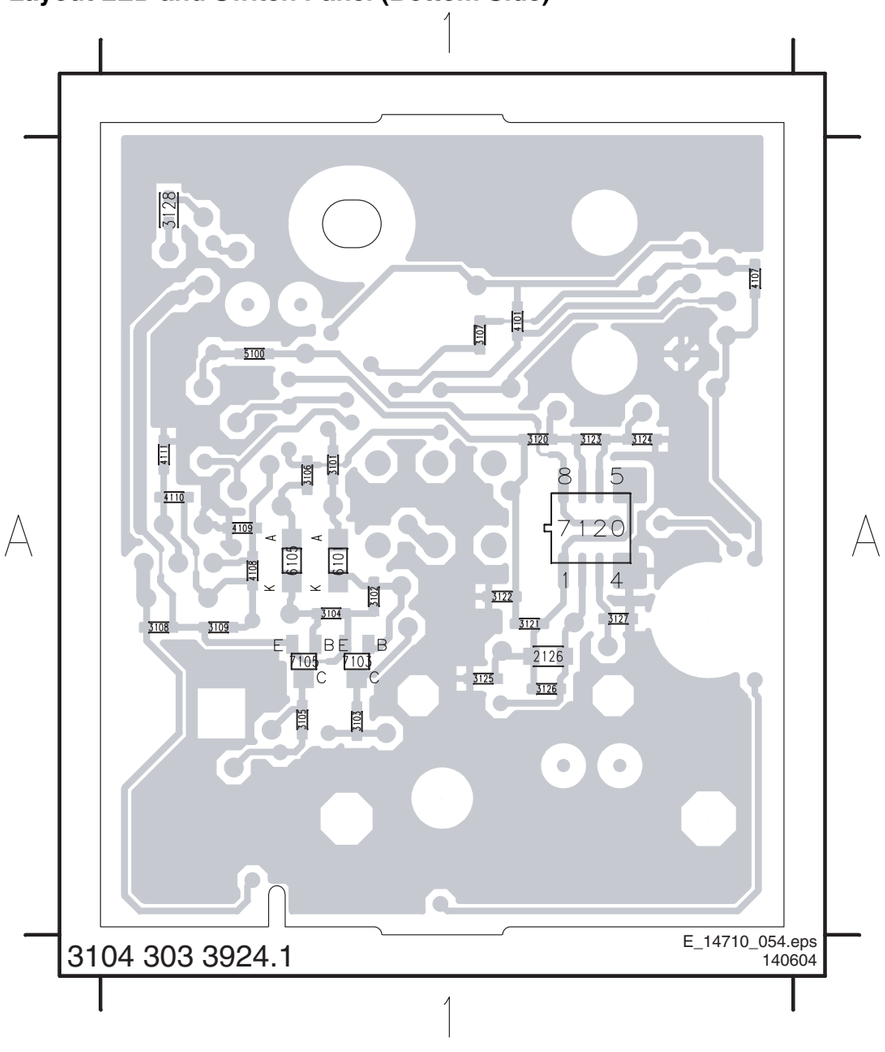
0222 E2
0317 A9
0320 B1
1101 D3
2107 C7
2120 E5
2126 F6
3101 C4
3102 B4
3103 C5
3104 B6
3105 C5
3106 D6
3107 B5
3108 B7
3109 B7
3120 E4
3121 F4
3122 F3
3123 F4
3124 F5
3125 F5
3126 F6
3127 F6
3128 E8
4101 C3
4107 B6
4108 C8
4109 C8
4110 C8
4111 C8
5100 C2
6101 C4
6103-A D5
6103-B D5
6105 C6
6127 F6
7103 B5
7105 C5
7107 C9
7120-A E5
7120-B E4
F101 C2
F102 C2
F103 C2
F104 C2
F105 C2
F106 C1
F107 C1
F108 C2
F109 D2
F110 C5
F111 C6
F112 D2
F115 A9
F116 A9
F119 B9
F120 B9
F121 E8
F122 E9
I102 C4
I103 C4
I104 C5
I105 C5
I106 C6
I107 C6
I109 B7
I111 C7
I112 C8
I113 C8
I120 F4
I123 F5
I125 F5
I126 F6
I127 E6

Layout LED and Switch Panel (Top Side)



0317 A1
0320 A1
1101 A1
2107 A1
2120 A1
6103 A1
6127 A1
7107 A1

Layout LED and Switch Panel (Bottom Side)



0317 A1
1101 A1
2126 A1
3101 A1
3102 A1
3103 A1
3104 A1
3105 A1
3106 A1
3107 A1
3108 A1
3109 A1
3120 A1
3121 A1
3122 A1
3123 A1
3124 A1
3125 A1
3126 A1
3127 A1
3128 A1
4101 A1
4107 A1
4108 A1
4109 A1
4110 A1
4111 A1
5100 A1
6101 A1
6105 A1
7103 A1
7105 A1
7107 A1
7120 A1

LCD Standby Audio Panel: Connections

SA1 CONNECTIONS

SA1

TO DISPLAY 1314 — PH-B — GND-SSP
TO DISPLAY 1315 — PH-B
TO DISPLAY 1316 — B12P-PH-K — GND-SSP
TO DISPLAY 1317 — B12P-PH-K
1318 — B6B-PH-K
+5V_SW, +5V_SW
9008 RES — F137
9009 RES — F138
9002 RES — GND-SSP
9003 RES — GND-SSP
ON_OFF SA1 (3x)
DIM_CONTROL SA1
DIM_CONTROL SA1
POR SA2
ON_OFF SA1 (3x)
DIM_CONTROL SA1
STANDBY SA2
ON_OFF SA1 (3x)
PROT_AUDIOSUPPLY SA2
+5V2-RELAY-IO2
F111, F113, F115, F121, F122, F139
+5V_SW — 9113 — GND-SSP
1M03 — PH-B
TO DISPLAY 1313 — 440091-7
TO DISPLAY 1312 — 440091-7
F102, F104, F105, F106, F107, F119
GND-SSP

TO 1M03 B21 SSB EMG
OR
TO 1M03 B10 SSB JAGUAR

TO 1303 A4 LCD SUPPLY 42"
1303 — B4P-VH — F103 — +24V_2
F110
1M10 — B4B-PH-K
TO AL AMBI LIGHT
1320 — B3P-VH — GND-SSP
TO 1320 A4 LCD SUPPLY 42"
1304 — B4P-VH
F101 — +12V_+24V
9018
F108 — +12V_A
TO 1304 A2 LCD SUPPLY 30"/37"/42"
TO 1304 AS1 LC04

9004 — 5018 — 68u RES — 9010
F120
9005 — 5019 — 68u RES — 9011
9006, 9007
1309 — B3P-VH — F112 — GND-SSP
TO 1309 A2 LCD SUPPLY 30"/37"/42" LC04
TO 1309 AS2 LC04
3190 1K2, 3191 1K2, 3192 1K2 — GND-SSP

0001 — GND screw — 1 — GND-SSP

1M46 — B11B-PH-K
F131 — GND-SSP
F135 — +8V6
F136 — +12V
F109 — +5V_SW
GND-SSP
F114 — +5V2 — F132
VTUN
+12V
9V_STBY
F117 — 9V_STBY_SW
9001

TO 1M46 B21 SSB EMG
OR
TO 1M46 B10 SSB JAGUAR

8204 000 8314.5

E_14620_132.eps
281204

0001 E1
1303 A9
1304 B9
1309 D9
1312 A8
1313 A7
1314 B1
1315 B2
1316 A3
1317 A4
1318 A5
1320 B9
1M03 B7
1M10 A9
1M46 D7
3190 D9
3191 D9
3192 D9
5018 C8
5019 D8
9001 E6
9002 B5
9003 B5
9004 C8
9005 D8
9006 C9
9007 C9
9008 A5
9009 A5
9010 C8
9011 D8
9018 B10
9113 B6
F101 B10
F102 A8
F103 A9
F104 A7
F105 A7
F106 A7
F107 B7
F108 B10
F109 E6
F110 B9
F111 B6
F112 D10
F113 B6
F114 E6
F115 B6
F117 E6
F119 B7
F120 C8
F121 B6
F122 C6
F131 D6
F132 E6
F135 D6
F136 D6
F137 A5
F138 B5
F139 C6

LCD Standby Audio Panel: Standby

SA2 STANDBY

Caution: Both ⏚ and ⏚ symbols can indicate a HOT ground in this schematic!!

SA2

COLD GROUND

HOT GROUND

TO 1306 AS1 LC04

TO 1306 A1 LCD SUPPLY 30"/37"/42"

TO 1307 AS1 LC04

TO 1307 A1 LCD SUPPLY 30"/37"/42"

TO 1305 AS1 LC04

TO 1305 A1 LCD SUPPLY 30"/37"/42"

HOT GROUND COLD GROUND

8204 000 8314.5

E_14620_133.eps 281204

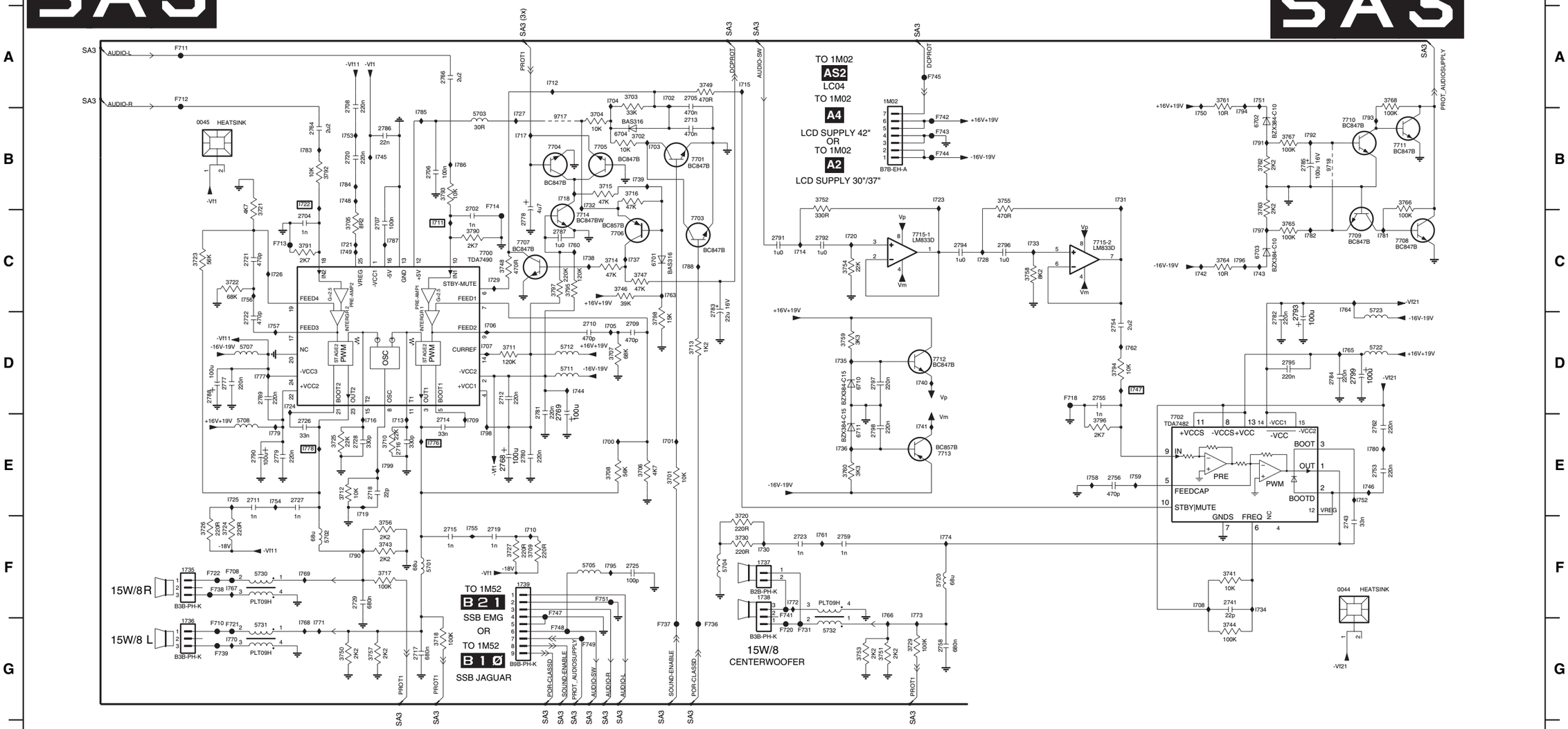
1301 B2	3508 F13	9021 B3	I191 G5
1305 D13	3509 A7	9022 B4	I192 H9
1306 B3	3510 F12	9023 B3	I197 C9
1307 H4	3511 B9	9110 H10	I198 D7
1310 A13	3512 C9	9111 D1	I199 D5
1311 A12	3513 D10	9112 E9	I501 F7
2101 C2	3515 B8	F100 D5	I502 F7
2102 F2	3516 A9	F123 B4	I503 F6
2103 D2	3517 A11	F124 B4	I504 F12
2105 D2	3528 C11	F125 D13	I505 F13
2107 A4	3529 C12	F126 E13	I506 F13
2108 B4	3530 D13	F127 H4	I507 F13
2109 F7	3531 C13	F128 H4	I508 A8
2110 F2	3532 C12	F129 H4	I509 A9
2111 E2	3533 D12	F130 H4	I510 A10
2112 D4	3534 H9	F133 H8	I511 A10
2118 D7	3535 H9	F134 H8	I512 H9
2123 E4	3536 H10	I100 B4	I513 D1
2124 H2	3537 H9	I101 A6	
2129 B6	3538 F8	I102 A7	
2131 C10	3539 H10	I103 C9	
2132 C11	3540 G13	I104 B10	
2140 F8	3541 G12	I105 B7	
2141 D7	3542 H13	I106 C11	
2143 D7	3544 G12	I107 C8	
2144 F2	3560 E12	I108 C9	
2145 D3	3561 F12	I109 C11	
2149 G7	3562 E12	I110 C3	
2150 G5	3999 H8	I111 C3	
2152 B4	5102 D1	I112 C10	
2153 F5	5103 E7	I113 B4	
2154 G10	5104 C5	I114 B6	
2159 D2	5105 C5	I115 C12	
2160 C9	5106 D1	I116 C10	
2162 D2	5108 D5	I117 C12	
2163 F2	5110 B6	I118 C5	
2506 C6	5112 D7	I119 C4	
2507 B7	5115 D8	I120 C6	
2508 C7	5500 B6	I121 C13	
2509 F13	5501 B4	I122 C2	
2510 E8	5504 B4	I123 C6	
2511 B9	5505 B4	I124 C5	
2512 E10	5506 E9	I125 D8	
2513 E7	5507 B9	I126 D9	
2515 B10	5508 E9	I127 C8	
2533 F11	6103 C1	I128 D7	
2534 E8	6104 D3	I129 D7	
2535 D10	6105 C4	I130 C4	
2536 D12	6106 F3	I131 C2	
2537 D13	6107 E7	I132 C4	
2538 H9	6108 F3	I133 C5	
2539 E8	6113 C7	I134 D3	
2540 H13	6114 G2	I135 D3	
2544 G13	6115 D4	I136 D2	
3100 F3	6116 F4	I137 E7	
3101 D3	6117 C3	I138 E7	
3102 D2	6118 B3	I139 E12	
3103 D2	6119 B3	I140 C1	
3104 D3	6120 G7	I141 D3	
3105 D2	6121 G7	I142 D2	
3106 E1	6122 E7	I143 D3	
3107 F1	6125 C8	I144 D2	
3108 D4	6130 B10	I145 D3	
3109 F1	6132 C10	I146 D4	
3110 F1	6133 C9	I147 E2	
3111 D2	6134 C9	I148 E10	
3112 G1	6140 D7	I149 E7	
3113 E7	6142 F3	I150 E13	
3114 F6	6144 D3	I151 E13	
3117 D3	6147 D5	I152 E12	
3122 B6	6148 F8	I153 E1	
3123 F7	6149 F9	I154 E4	
3124 F7	6150 G4	I155 E4	
3125 E3	6151 G5	I156 E4	
3126 E4	6153 H6	I157 F6	
3127 F4	6156 H5	I158 F7	
3128 F6	6504 A7	I159 F8	
3132 D9	6505 E7	I160 F8	
3134 C10	6508 G9	I161 F9	
3135 C10	6510 E13	I162 E2	
3137 D8	6511 A8	I163 F9	
3138 D3	6531 F10	I164 F7	
3140 C8	6532 C11	I165 F7	
3141 F10	6540 F12	I166 F3	
3142 F9	6562 E13	I167 F4	
3145 G2	7100 F4	I168 F9	
3146 F4	7101 D4	I169 F2	
3147 H3	7102 C4	I170 G8	
3148 E4	7105 E4	I171 F5	
3149 E4	7131 B10	I172 F2	
3150 D4	7140 F10	I173 F2	
3152 D3	7150 H6	I174 F3	
3153 C8	7501 F6	I175 F5	
3155 G5	7505 G13	I176 G7	
3156 G6	7506 C11	I177 F2	
3157 H5	7507 C12	I178 G13	
3158 G6	7508 H10	I179 G12	
3159 E8	7509 G12	I180 G5	
3160 D4	7510 F13	I181 G2	
3161 C10	7511 A8	I182 G13	
3171 C9	7512 A10	I183 G5	
3172 C10	7531 E11	I184 G6	
3175 F8	7532 D9	I185 F3	
3176 G10	7560 E12	I186 G6	
3506 G12	9019 A8	I189 H10	
3507 F13	9020 C3	I190 G2	

LCD Standby Audio Panel: Audio

0044 F13 0045 B2 1735 F2 1736 G2 1737 F7 1738 F7 1739 F5 1M02 A9 2702 C4 2704 C3
2705 A7 2706 B4 2707 C4 2708 A3 2709 D6 2710 D6 2711 E2 2712 D5 2713 B7 2714 E4
2715 F4 2716 E4 2717 G4 2718 E3 2719 F5 2720 B3 2721 C2 2722 D2 2723 F8 2725 F6
2726 E3 2727 E3 2728 E3 2729 F3 2741 F12 2743 F13 2753 E13 2754 D11 2755 D11 2756 E11
2758 G9 2759 F8 2762 E13 2764 B3 2766 A4 2768 E5 2769 D5 2777 D2 2778 C5 2779 E3
2780 E5 2781 D5 2782 D12 2783 C7 2784 D13 2785 B13 2786 B4 2787 C5 2788 D2 2789 D2
2790 E2 2791 C7 2792 C8 2793 D13 2794 C9 2795 D12 2796 C10 2797 D8 2798 E8 2799 D13
3701 E6 3702 B6 3703 A6 3704 B6 3705 C3 3706 E6 3707 D6 3708 E6 3709 F5 3710 E4
3711 D5 3712 E3 3713 D7 3714 C6 3715 B6 3716 B6 3717 F4 3718 G4 3720 F7 3721 B2
3722 C2 3723 C2 3724 F2 3725 E3 3726 F2 3727 F5 3729 G9 3730 F7 3741 F12 3743 F4
3744 G12 3746 C6 3747 C6 3748 C5 3749 A7 3750 G3 3751 G8 3752 B8 3753 G8 3754 C8
3755 B10 3756 F4 3757 G3 3758 C10 3759 D8 3760 E8 3761 A12 3762 B12 3763 B12 3764 C12
3765 C12 3766 B14 3767 B12 3768 A13 3790 C4 3791 C3 3792 B3 3793 B4 3794 D11 3795 C5
3796 E11 3797 C5 3798 D6 5701 F4 5702 F3 5703 B5 5704 F7 5705 F6 5707 D2 5708 E2
5711 D5 5712 D5 5720 F9 5722 D13 5723 D13 5730 F2 5731 G2 5732 G8 6701 C6 6702 B12
6703 C12 6704 B6 6710 D8 6711 E8 7700 C5 7701 B7 7702 E11 7703 C7 7704 B5 7705 B6
7706 C6 7707 C5 7708 C13 7709 C13 7710 B13 7711 B13 7712 D9 7713 E9 7714 C5 7715-1 C9
7715-2 C11 9717 B5 9718 B13 F708 F2 F710 G2 F711 A2 F713 C3 F714 B5 F718 D10
F720 G8 F721 G2 F722 F2 F731 G8 F736 G7 F737 G6 F738 F2 F739 G2 F741 F8 F742 B9
F743 B9 F744 B9 F745 A9 F747 F5 F748 G5 F749 G6 F751 F6 I700 E6 I701 E6 I702 A6
I703 B6 I704 A6 I705 D6 I706 D5 I707 D5 I708 F12 I709 E4 I710 F5 I711 C4 I712 A5
I713 E4 I714 C8 I715 A7 I716 E3 I717 B5 I718 B5 I719 E3 I720 C8 I721 C3 I722 B3
I723 B9 I724 D3 I725 E2 I726 C3 I727 B5 I728 C9 I729 C5 I730 F7 I731 B11 I732 B6
I733 C10 I734 F12 I735 D8 I736 C6 I737 C6 I738 B6 I739 B6 I740 D9 I741 E9 I742 C12
I743 C12 I744 D5 I745 B4 I746 E13 I747 D11 I748 B3 I749 C3 I750 B12 I751 A12 I752 E13
I753 B3 I754 E3 I755 F4 I756 C2 I757 D2 I758 E11 I759 E11 I760 C5 I761 F8 I762 D11
I763 C6 I764 C13 I765 D13 I766 F9 I767 F2 I768 G3 I769 F3 I771 G3 I772 F8 I773 B3
I774 B12 I776 C13 I777 D2 I778 E4 I780 E13 I781 C13 I782 C13 I783 B3 I784 B3
I785 B4 I786 B4 I787 C4 I788 C7 I790 F3 I791 B12 I792 B13 I793 B13 I794 B12
F795 F6 F796 C12 F797 C12 F798 E5 F799 E4

SA3 AUDIO

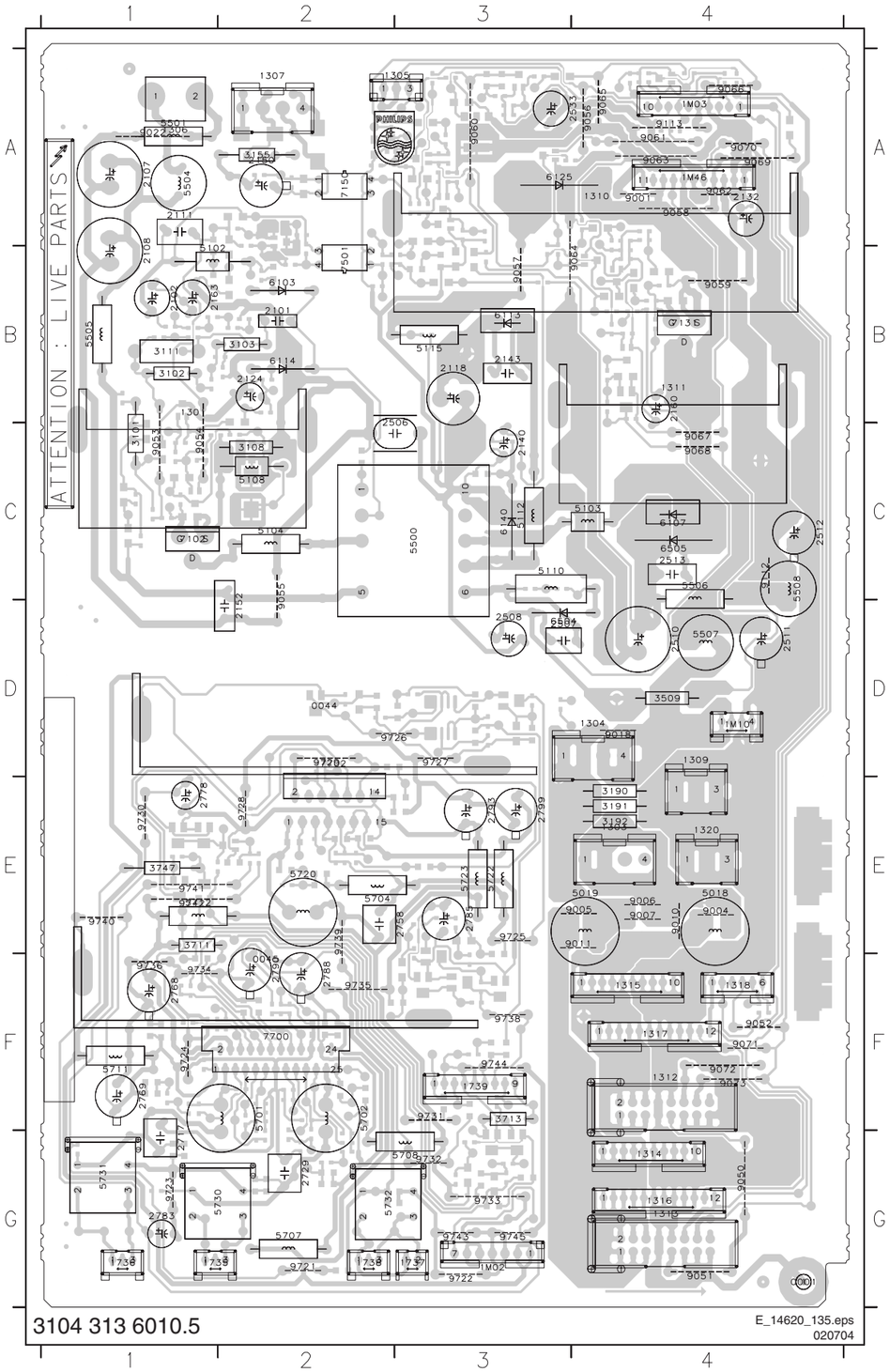
SA3



8204 000 8313.5

E_14620_134.eps
281204

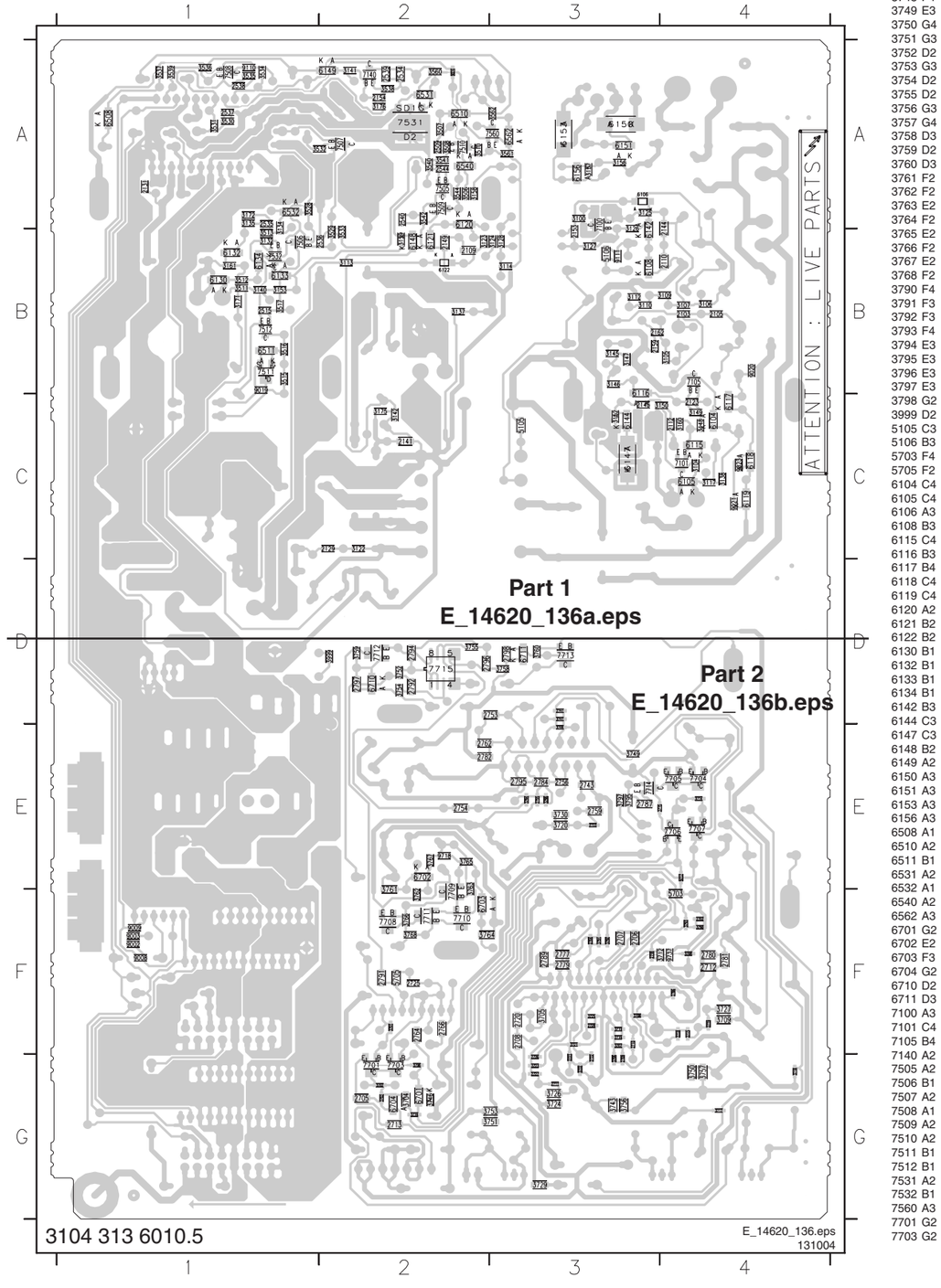
Layout LCD Standby Audio Panel (Top Side)



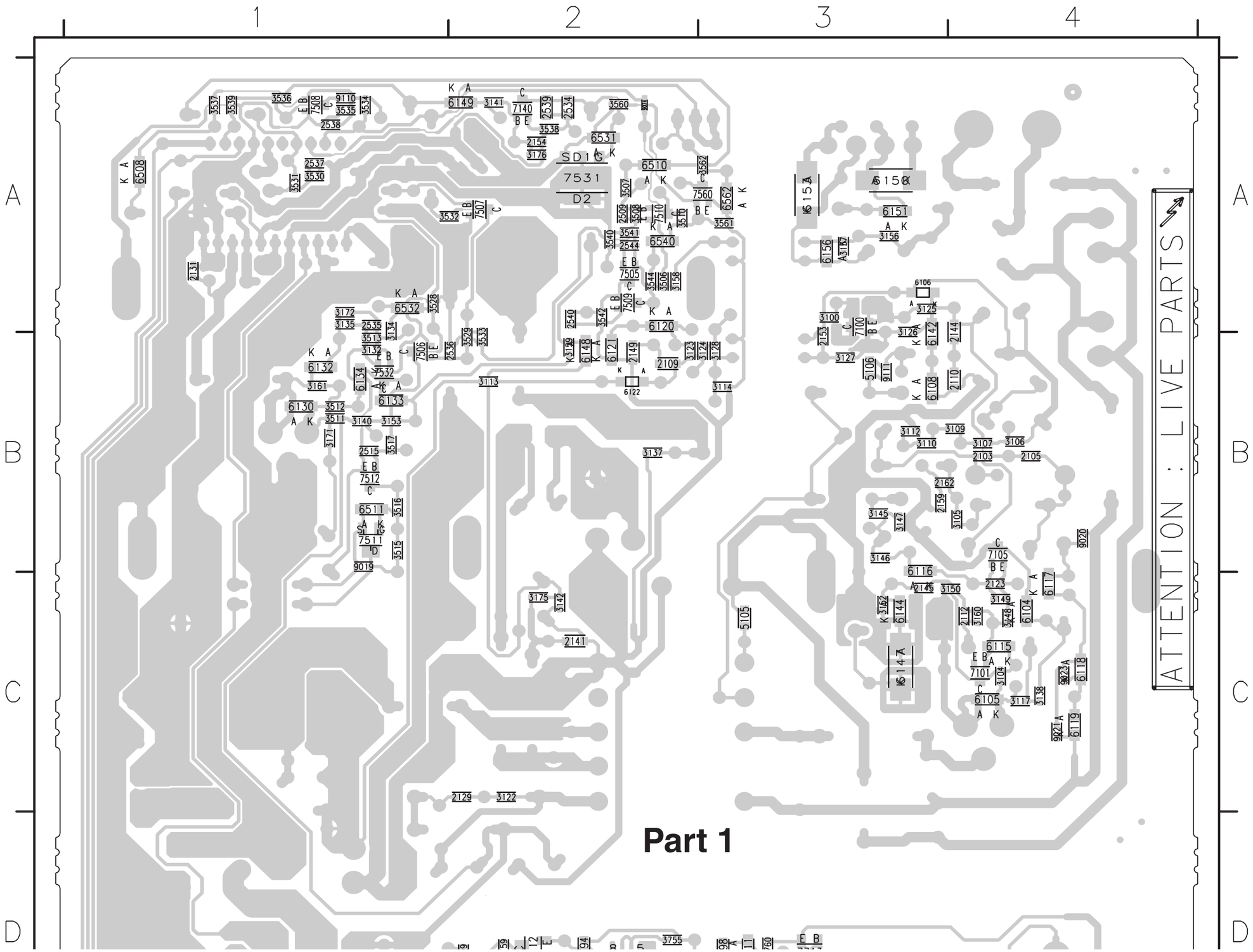
0001 G4 5507 D4
0044 D1 5508 C4
0045 E1 5701 F2
1301 B1 5702 F2
1303 E4 5704 E2
1304 D4 5707 G2
1305 A3 5708 G3
1306 A1 5711 F1
1307 A2 5712 E1
1309 D4 5720 E2
1310 A3 5722 E3
1311 B4 5723 E3
1312 F4 5730 G2
1313 G4 5731 G1
1314 G4 5732 G3
1315 F4 6103 B2
1316 G4 6107 C4
1317 F4 6113 B3
1318 F4 6114 B2
1320 E4 6125 A3
1735 G1 6140 C3
1736 G1 6504 D3
1737 G3 6505 C4
1738 G2 7102 C1
1739 F3 7131 B4
1M02 G3 7150 A2
1M03 A4 7501 B2
1M10 D4 7700 F2
1M46 A4 7702 E3
2101 B2 9001 A4
2102 B1 9004 E4
2107 A1 9005 E4
2108 A1 9006 E4
2111 A1 9007 E4
2118 B3 9010 E4
2124 B2 9011 E4
2132 A4 9018 D4
2140 C3 9022 A1
2143 B3 9050 G4
2150 A2 9051 G4
2152 D2 9052 F4
2160 B4 9053 B1
2163 B1 9054 B1
2506 B2 9055 C2
2507 D3 9056 A4
2508 D3 9057 A3
2510 D4 9058 A4
2511 D4 9059 B4
2512 C4 9060 A3
2513 C4 9061 A4
2533 A4 9062 A4
2717 F1 9063 A4
2729 G2 9064 A3
2758 E3 9065 A4
2768 F1 9066 A4
2769 F1 9067 C4
2778 E1 9068 C4
2783 G1 9069 A4
2785 E3 9070 A4
2788 F2 9071 F4
2790 E2 9072 F4
2793 E3 9073 F4
2799 E3 9112 C4
3101 B1 9113 A4
3102 B1 9721 G2
3103 B2 9722 G3
3108 C2 9723 G1
3111 B1 9724 F1
3155 A2 9725 E3
3190 E3 9726 D2
3191 E3 9727 D3
3192 E3 9728 E2
3509 D4 9729 D2
3711 F1 9730 E1
3713 F3 9731 F3
3747 E1 9732 G3
5018 E4 9733 G3
5019 E4 9734 F1
5102 B2 9735 F3
5103 C4 9736 F1
5104 C2 9738 F3
5108 C1 9739 F2
5110 C3 9740 E1
5112 C3 9741 E1
5115 B3 9742 E1
5500 C3 9743 G3
5501 A1 9744 F3
5504 A1 9745 G3
5505 B1
5506 C4

Layout LCD Standby Audio Panel (Overview Bottom Side)

2103 B4 2149 B2 2538 A1 2710 F3 2722 G3 2756 E3 2786 F4 3104 C4 3123 B2 3140 B1 3155 A3 3190 E1 3515 B1 3536 A1 3701 F2 3712 F4 3724 G3 7704 E4
2105 B4 2153 B3 2539 A2 2711 G3 2723 E3 2759 E3 2787 E3 3105 B4 3124 B3 3141 A2 3156 A3 3191 E1 3516 B1 3537 A1 3702 G2 3713 F2 3725 F3 7705 E4
2109 B2 2154 A2 2540 A2 2712 F4 2725 F2 2762 E2 2789 F3 3106 B4 3125 A3 3142 C2 3157 A3 3192 E1 3517 B1 3538 A2 3703 G2 3714 E4 3726 G3 7706 E3
2110 B4 2159 B3 2544 A2 2713 G2 2726 G3 2764 F2 2791 F2 3107 B4 3126 A3 3145 B3 3158 A2 3506 A2 3528 A1 3539 A1 3704 G2 3715 E3 3727 F4 7707 E4
2112 C4 2162 B3 2702 F4 2714 F4 2727 G3 2766 F2 2792 D2 3109 B4 3127 B3 3146 B3 3159 B2 3507 A2 3529 B2 3540 A2 3705 F3 3716 G2 3729 G3 7708 F2
2123 C4 2509 A2 2704 F3 2715 F4 2728 F3 2777 F3 2794 D2 3110 B3 3128 B3 3147 B3 3160 C4 3508 A2 3530 A1 3541 A2 3706 G3 3717 G4 3730 E3 7709 F2
2129 C2 2515 B1 2705 G2 2716 F3 2741 D3 2779 F3 2795 E3 3112 B3 3132 B1 3148 C4 3161 B1 3509 D1 3531 A1 3542 A2 3707 F3 3718 G4 3741 D3 7710 F2
2131 A1 2534 A2 2706 F3 2718 F3 2743 E3 2780 F4 2796 D2 3113 B2 3134 A1 3149 C4 3171 B1 3510 A2 3532 A2 3544 A2 3708 F3 3720 E3 3743 G3 7711 F2
2141 C2 2535 A1 2707 F3 2719 F4 2753 D3 2781 F4 2797 D2 3114 B3 3135 A1 3150 C4 3172 A1 3511 B1 3533 B2 3560 A2 3709 F4 3721 F3 3744 E3 7712 D2
2144 A4 2536 B2 2708 F3 2720 F3 2754 E2 2782 E2 2798 D3 3117 C4 3137 B2 3152 C3 3175 C2 3512 B1 3534 A1 3561 A3 3710 F3 3722 G3 3746 G2 7713 D3
2145 C3 2537 A1 2709 G3 2721 G3 2755 E3 2784 E3 3100 A3 3122 C2 3138 C4 3153 B1 3176 A2 3513 B1 3535 A1 3562 A3 3711 E4 3723 G3 3747 E4 7714 E3
3748 F4 7715 D2
3749 E3 9002 F1
3750 G4 9003 F1
3751 G3 9008 F1
3752 D2 9009 F1
3753 G3 9019 B1
3754 D2 9020 B4
3755 D2 9021 C4
3756 G3 9023 C4
3757 G4 9074 A2
3758 D3 9110 A1
3759 D2 9111 B3
3760 D3 9717 E4
3761 F2 9718 E2
3762 F2 9737 F4
3763 E2
3764 F2
3765 E2
3766 F2
3767 E2
3768 F2
3790 F4
3791 F3
3792 F3
3793 F4
3794 E3
3795 E3
3796 E3
3797 E3
3798 G2
3999 D2
5105 C3
5106 B3
5703 F4
5705 F2
6104 C4
6105 C4
6106 A3
6108 B3
6115 C4
6116 B3
6117 B4
6118 C4
6119 C4
6120 A2
6121 B2
6122 B2
6130 B1
6132 B1
6133 B1
6134 B1
6142 B3
6144 C3
6147 C3
6148 B2
6149 A2
6150 A3
6151 A3
6153 A3
6156 A3
6508 A1
6510 A2
6511 B1
6531 A2
6532 A1
6540 A2
6562 A3
6701 G2
6702 E2
6703 F3
6704 G2
6710 D2
6711 D3
7100 A3
7101 C4
7105 B4
7140 A2
7505 A2
7506 B1
7507 A2
7508 A1
7509 A2
7510 A2
7511 B1
7512 B1
7531 A2
7532 B1
7560 A3
7701 G2
7703 G2



Layout LCD Standby Audio Panel (Part 1 Bottom Side)



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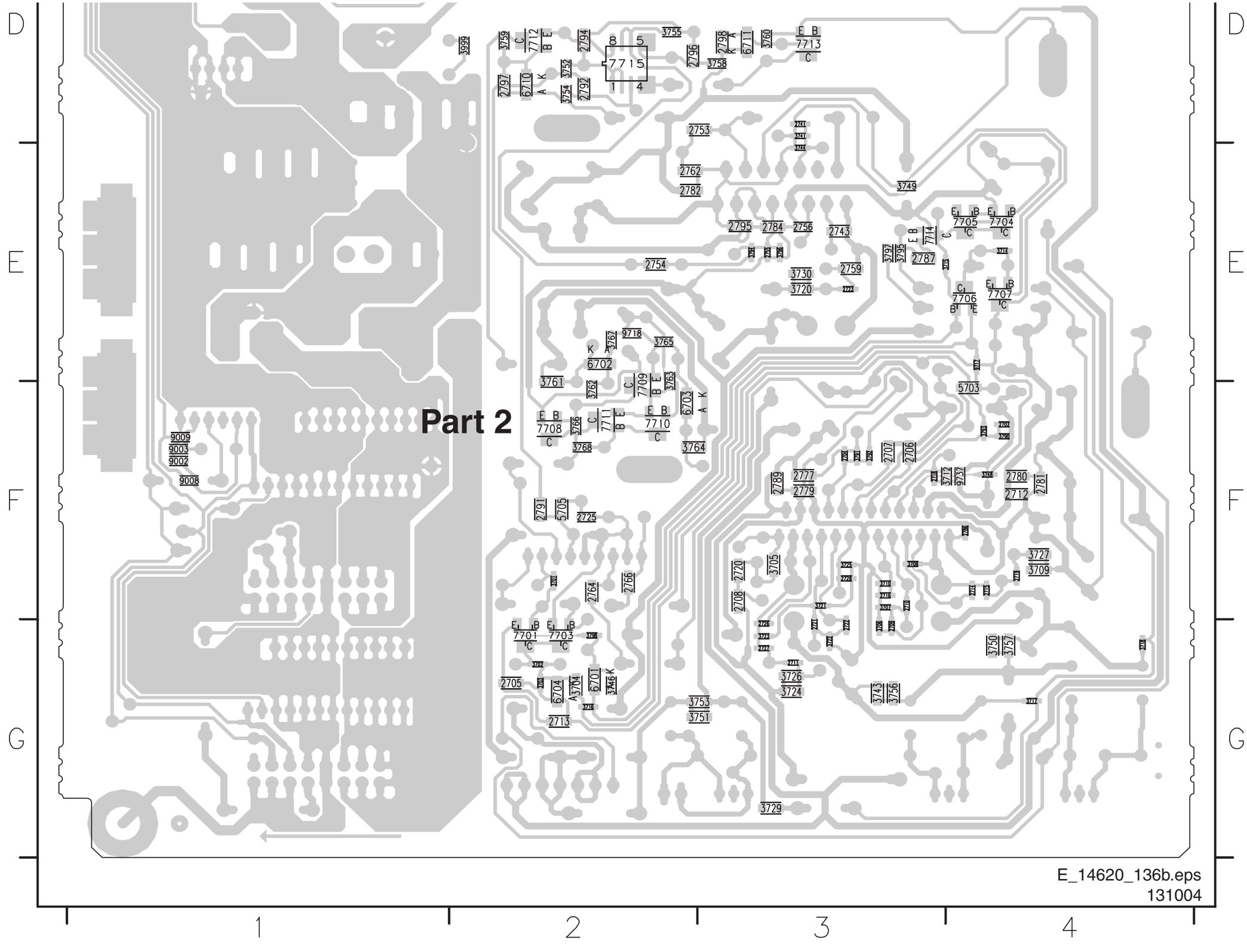
131004

Layout LCD Standby Audio Panel (Part 2 Bottom Side)



Personal Notes:

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8. Alignments

Index of this chapter:

Note: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the CURSOR UP, DOWN, LEFT or RIGHT keys of the remote control transmitter.

8.1 General Alignment Conditions

8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage (depends on region):
  - AP-NTSC: 120 V_{AC} or 230 V_{AC} / 50 Hz (± 10%).
  - AP-PAL-multi: 120 - 230 V_{AC} / 50 Hz (± 10%).
  - EU: 230 V_{AC} / 50 Hz (± 10%).
  - LATAM-NTSC: 120 - 230 V_{AC} / 50 Hz (± 10%).
  - US: 120 V_{AC} / 60 Hz (± 10%).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 15 minutes.
- Measure voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
  Caution: never use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.1.2 Initial Settings

Perform all electrical adjustments with the following initial settings:

1. To avoid the working of the lightsensor, set "Active Control" to "Off" (via the "Active Control" button on the RC).
2. Set "Smart Picture" to "Natural" or “Soft” (via the "Smart Picture" button on the RC).

8.1.3 Alignment Sequence

- First, set the correct options:
  - In SAM, select OPTIONS,
  - Fill in the option settings according to the set sticker (see also paragraph "Option Settings"),
  - Store the OPTIONS by switching the set to STAND-BY.
- Warming up (>15 minutes).
- White-D alignment.

8.2 Hardware Alignments

8.2.1 Backlight Voltage Alignment

Switch the set "on" and measure the voltage between pin 3 (or 4) of connector 1304 (on MF panel) and ground. Align R3026 until this voltage is 12.2 V_{DC} +/- 0.1 V.

Caution: This voltage must be aligned very precisely (within 1%): when it is too high, it can destroy the inverters. When it is too low, the backlight will not start up.

8.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the geometry, white tone and tuner (IF) can be aligned. To store the data: Use the RC button Menu to switch to the main menu and next, switch to ‘Stand-by’ mode.

For the next alignments, supply the following test signals via a video generator to the RF input:

- **EU/AP-PAL** models: a PAL B/G TV-signal with a signal strength of at least 1 mV and a frequency of 475.25 MHz
- **US/AP-NTSC** models: an NTSC M/N TV-signal with a signal strength of at least 1 mV and a frequency of 61.25 MHz (channel 3).

8.3.1 SAM Menu

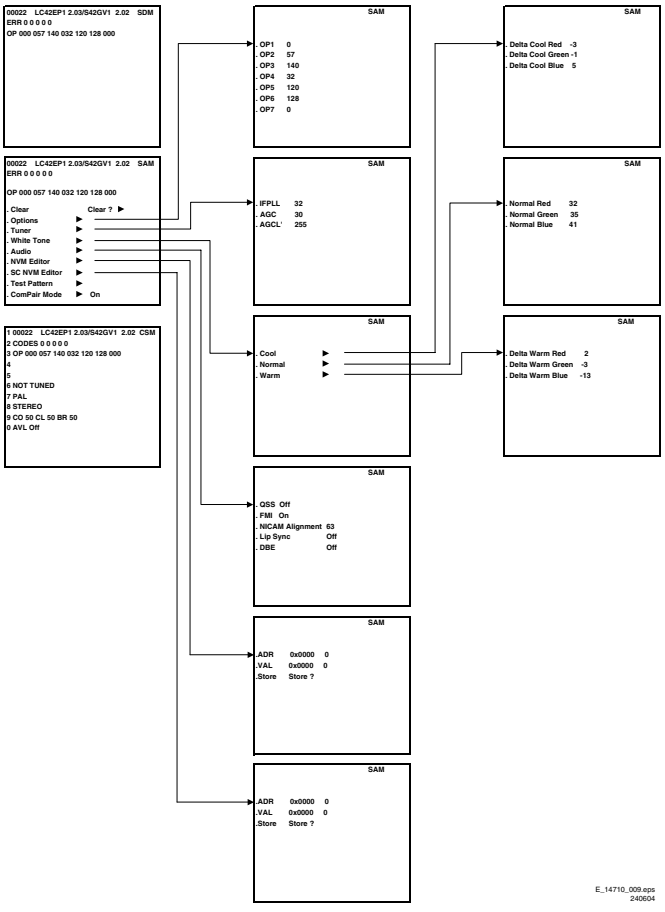


Figure 8-1 Overview SAM menu (example from EU set).

8.3.2 White Tone

Method 1 (with colour analyser):

1. Supply a 100% white uniformity test signal (100 IRE white) to the tuner.
2. Enter SAM menu (colour features are switched “off” automatically).
3. Do NOT change the SMART PICTURE, ACTIVE CONTROL, and CONTRAST+ settings to prevent activating of Green Enhancement, Blue Stretch, and Black Stretch.

Offset values in NVM are used for HD-, HDMI-, and VGA mode, therefore only the settings in TV mode need to be set.

Make the following settings in the normal **user menu**, when the television is in TV Mode:

Table 8-1 User menu settings for White Tone alignment

	LCD (AUO)	LCD (LPL)	Plasma (SDI)
CONTRAST	99		
BRIGHTNESS	42 (EU) 44 (US)	46	46 (AP+EU) 48 (US+LA)
COLOR/SAT.	50 (AP+LA+US) 60 (EU)		

Go to WHITE TONE in SAM and set NORMAL GREEN to:

Table 8-2 Service menu settings for White Tone alignment

	LCD (AUO)	LCD (LPL)	Plasma (SDI)
NORM. GREEN	200		180

1. Measure with a calibrated (phosphor- independent) colour analyser (e.g. Minolta CA-200) in the centre of the screen (use a contact less analyser, e.g. Minolta CA-210, to align the LCD TV). The analyser may not touch the screen, and the measurement must be done in a dark environment.
   Note: The colour analyser must be calibrated for the LCD or Plasma panel in question. See the manual of the colour analyser for the procedure on how to perform this calibration.
2. Leave the value with the lowest output on the initial value.
3. Align the NORMAL white points, by lowering the other two colours, to the right x-y coordinates (see table "White Tone alignment values").
   Note: To prevent clipping of the colour, these values must only be lowered!

Table 8-3 White Tone alignment values

	NORMAL colour temp. (all regions)
X	0.289
Y	0.299

Only the values for NORMAL are aligned with X, Y values. The delta values for COOL and WARM are given below.

Table 8-4 Fixed delta values

Screen Type	Colour temp.	RED	GREEN	BLUE
LCD (AUO)	DELTA COOL	-3	-12	+10
	DELTA WARM	+5	-5	-20
LCD (LPL)	DELTA COOL	-8	-12	+3
	DELTA WARM	+2	-10	-21
Plasma (SDI)	DELTA COOL	-6	-10	+5
	DELTA WARM	+4	-5	-19

After the alignment is finished, switch the set to STANDBY, in order to store the alignments.
Note: When disconnecting the power before doing this, the settings will not be stored.

Method 2 (without colour analyser):
If you do not have a colour analyser, you can use the default values. These values are based on the average values in production.

- Set the values for the NORMAL colour temperature. Given in the table “Average statistical values for NORMAL” from production.
- Set the delta values for the COOL and WARM mode. See table: “Fixed delta values.”

After the alignment is finished, switch the set to STANDBY, in order to store the alignments.
Note: When disconnecting the power before doing this, the settings will not be stored.

Table 8-5 Average statistical values for “NORMAL”

Display type	Colour Temp.	RED	GREEN	BLUE
LCD (AUO)	NORMAL	165	182	200
LCD (LPL)	NORMAL	200	195	190
Plasma 37“ (SDI)	NORMAL	174	180	178
Plasma 42” (SDI)	NORMAL	173	180	172
Note: Values are valid for all regions				

8.3.3 Tuner Adjustment

AGC (RF AGC Take Over Point)
Set pattern generator (e.g. PM5580) with colour bar pattern and connect to aerial input with RF signal amplitude -10 mV and set frequency for NTSC to 61.25 MHz (channel 3).

- Activate the SAM-menu. Go to the sub-menu TUNER, select the sub-menu option AFC WINDOW and adjust the value to “100 kHz”.
- Select the AGC sub-menu.
- Connect a DC multi-meter to test point F306 or pin 1 of the tuner.
- Adjust the AGC until the voltage at pin 1 of the tuner is 3.3 V +0.5 / -1.0.
- The value can be increased or decreased by pressing the RIGHT/LEFT cursor button on the RC.
- Switch the set to STAND-BY to store the data.

8.3.4 Grey Scale Adjustment

SDTV Grey Scale Adjustment

Equipment and setting

- E.g. Fluke 54200 or Philips PM5580.
- 100% “8-step grey scale” pattern.

Alignment Method

- Switch with the RC to TV mode,
- Press the MUTE button on RC,
- Set SMART PICTURE to SOFT mode,
- Activate the auto colour function by pressing key-sequence:
  INFO - MUTE - MUTE - MUTE - INFO - MENU - INFO.

Expected Results

- Visual check if the 8 Grey levels are correct.

Analog PC Grey Scale Adjustment

Equipment and setting

- Quantum Data 802B.
- PC input signal, with 64 levels Grey scale pattern, 1024x768 @ 60 Hz (Format= 81:DMT1060, Pattern= 123:Grey 64).
- PC input at D-sub VGA connector.

Alignment Method

- Switch with the RC to PC mode.
- Press the MUTE button on RC.
- Set BRIGHTNESS and CONTRAST to nominal “50”.
- Activate the auto colour function by pressing key-sequence:
  INFO - MUTE - MUTE - MUTE - INFO - MENU - INFO.

Expected Results
- Visual check if the 64 Grey levels are correct.

HD Grey Scale Adjustment

Equipment and setting
- Quantum Data 802B.
- HD input signal, Top half 100% colour bar and bottom half Grey scale pattern, 1920x1080i @ 60 Hz YPbPr (Format= 1080i30, Pattern= HDBar100).
- HD input at D-sub VGA connector.

Alignment Method
- Switch with the RC to HD mode.
- Press the MUTE button on RC.
- Activate the auto colour function by pressing key-sequence:
  INFO - MUTE - MUTE - MUTE - INFO - MENU - INFO.

Expected Results
- Visual check if Colour bar tint and Grey scale is correct.

8.3.5 Sound

No adjustments needed for sound.

8.4 Option Settings

Options are used to control the presence/absence of certain features and hardware.
See for an overview, the table on the next page.

8.4.1 How to change an Option Byte

An Option Byte represents a number of different options. Changing these bytes directly makes it possible to set all options very fast. All options are controlled via seven option bytes. Select the option byte (OP1.. OP7) with the cursor UP/ DOWN keys, and enter the new value.

Leaving the OPTION sub menu saves the changes in the Option Byte settings. Some changes will only take effect after the set has been switched “off” and “on” with the AC power switch (cold start).

Table 8-6 Option codes (general overview for all regions and displays)

Bit (DEC)	Option	Description	/78 (LATAM)	/61 (AP-NTSC)	/69,79,98 (AP-PAL)	/93 (China)	/10, /12 (Europe)	/17, /37 (NAFTA)	Remarks
7 (128)	OP_PHILIPS_TUNER	Philips Tuner available	1	1	1	0	1	1	
6 (64)	OP_FM_RADIO	FM Radio available	0	0	0	0	0	0	
5 (32)	OP_LNA	Low Noise Amplifier available	0	0	0	0	0	0	
4 (16)	OP_ATS	Auto Tuning System	0	0	0	0	1	0	
3 (8)	OP_ACI	ACI	0	0	0	0	1	0	
2 (4)	OP_UK_PNP	After virgin = English + Great Britain	0	0	0	0	0	0	
1 (2)	OP_VIRGIN_MODE	Activate Plug & Play menu at start-up	0	0	0	0	0	0	
0 (1)	OP_CHINA	AP-PAL tuning algorithm for China	0	0	0	1	0	0	
OP1:			**128**	**128**	**128**	**1**	**152**	**128**	
7 (128)	OP_SMART_SOUND	Four smart sound settings	1	1	1	1	1	1	
6 (64)	OP_UI_GREEN	UI for Magnavox sets (NAFTA)	0	0	0	0	0	0	
5 (32)	OP_CHANNEL_NAMING	Naming of channel feature available	1	1	1	1	0	1	
4 (16)	OP_LTI	Histogr. algorithm available (TDA9178)	1	1	1	1	1	1	
3 (8)	OP_TILT	Picture Rotation available	0	0	0	0	0	0	
2 (4)	OP_FINE_TUNING	Fine Tuning algorithm available	1	1	1	1	1	1	
1 (2)	OP_PIP_PHILIPS_TUNER	PIP Philips tuner	0	0	0	0	0	0	
0 (1)	OP_HUE	Tint for NTSC transmission	1	1	1	1	0	1	
OP2:			**181**	**181**	**181**	**181**	**148**	**181**	
7 (128)	OP_EW_FUNCTION	Geometry adj. for Large screen sets	0	0	0	0	0	0	
6 (64)	OP_2TUNER_PIP	Double Tuner for PIP available	0	0	0	0	0	0	
5 (32)	OP_PIP_SPLITTER	Not used	0	0	0	0	0	0	
4 (16)	OP_SPLITTER	Not used	0	0	0	0	0	0	
3 (8)	OP_VIRTUAL_DOLBY	Virtual Dolby Effect	1	1	1	1	1	1	
2 (4)	OP_WIDE_SCREEN	16:9 sets	1	1	1	1	1	1	
1 (2)	OP_WSSB	Wide Screen Signalling Bit detection	0	0	1	0	1	0	
0 (1)	OP_ECO_SUBWOOFER	Sub woofer available	0	0	0	0	0	0	
OP3:			**12**	**12**	**14**	**12**	**14**	**12**	
7 (128)	OP_LIP_SYNC	Lip Synchronisation Circuit available	0	0	0	0	1	0	
6 (64)	OP_NOTUSED2	Not used	0	0	0	0	0	0	
5 (32)	OP_ULTRA_BASS	Ultra Bass Boost available	0	0	0	0	0	0	
4 (16)	OP_DELTA_VOLUME	Delta Volume feature available	0	0	0	0	1	0	EU only
3 (8)	OP_NOTUSED3	Not used	0	0	0	0	0	0	
2 (4)	OP_NOTUSED4	Not used	0	0	0	0	0	0	
1 (2)	OP_STEREO_DBX	Stereo DBX for NTSC available	1	0	0	0	0	1	NTSC only
0 (1)	OP_STEREO_NICAM_2CS	Stereo NICAM 2CS available	0	0	1	0	1	0	
OP4:			**2**	**0**	**1**	**0**	**145**	**2**	
7 (128)	OP_AV1	External Source 1 available	1	1	1	1	1	1	
6 (64)	OP_AV2	External Source 2 available	1	1	1	1	1	1	
5 (32)	OP_AV3	External Source 3 (Side AV) available	1	1	1	1	1	1	
4 (16)	OP_CVI	Component Video In available	1	1	1	1	0	1	Not for EU
3 (8)	OP_SVHS2	Super Video Home System 2 available	1	1	1	1	1	1	
2 (4)	OP_SVHS3	Super Video Home System 3 available	1	1	1	1	1	1	
1 (2)	OP_HOTEL_MODE	LATAM specific simplified Hotel Mode	0	0	0	0	0	0	
0 (1)	OP_NOTUSED	Not used	0	0	0	0	0	0	
OP5:			**252**	**252**	**252**	**252**	**236**	**252**	
7 (128)	OP_PERSONAL_ZAPPING	Zapping of channels feature available	0	0	0	0	0	0	
6 (64)	OP_SMART_SURF	Surf List available	1	0	0	0	0	1	
5 (32)	OP_FMTRAP	FM trap available	0	0	0	0	0	0	
4 (16)	OP_COMBFILTER	comb filter available	1	1	1	1	1	1	In Hercules
3 (8)	OP_ACTIVE_CONTROL	Auto Picture Impr. feature available	1	1	1	1	1	1	
2 (4)	OP_SMART_LOCK	Toggle Child Lock & Lock Chan. enabled	1	1	1	1	1	1	
1 (2)	OP_LIGHT_SENSOR	Light Sensor enabled	1	1	1	1	1	1	
0 (1)	OP_TWIN_TEXT	2 txt pages on screen available	0	0	1	1	1	0	
OP6:			**94**	**30**	**31**	**31**	**31**	**94**	
7 (128)	OP_TIME_WIN1	1= 5 s, 0= 2 s (Europe fixed 1.2 s)	1	1	0	1	0	1	
5, 6	not used		0	0	0	0	0	0	
4 (16)	OP_3DCOMB	3D comb filter available	0	1	0	0	0	1	NTSC only
<AP-PAL>									
3 (8)	OP_COLOR_SYSTEM_AP	1: Auto, PAL 4.43, NTSC 4.43, NTSC 3.58, SECAM 0: OFF- Auto, PAL 4.43, NTSC 4.43, NTSC 3.58	0	0	1	0	0	0	
2 (4)	OP_SOUND_SYSTEM_AP_1	000: BG 001: BG / DK 010: I / DK 011: BG / I / DK 100: BG / I / DK / M	0	1	1	1	0	0	
1 (2)	OP_SOUND_SYSTEM_AP_2		0	0	0	0	0	0	
0 (1)	OP_SOUND_SYSTEM_AP_3		0	0	0	0	0	0	
<EUROPE>									
3 (8)	OP_DUMMY6	Not used	0	0	0	0	0	0	
2 (4)	OP_DUMMY7	Not used	0	0	0	0	0	0	
1 (2)	OP_WEST_EU	West Europe Set (0 - East Europe Set) by default "on"	0	0	0	0	1	0	
0 (1)	OP_MULTI_STANDARD_EUR	For Europe multi standard set	0	0	0	0	1	0	
<LATAM>									
3 (8)	OP_DUMMY6	Not used	0	0	0	0	0	0	
2 (4)	OP_DUMMY7		0	0	0	0	0	0	
1 (2)	OP_SYSTEM_LT_1	00: NTSC-M, 01: NTSC-M, PAL-M, 10: NTSC-M, PAL-M, PAL-N, 11: NTSC-M, PAL-M, PAL-N, PAL-BG	0	0	0	0	0	0	
0 (1)	OP_SYSTEM_LT_2		0	0	0	0	0	0	
<NAFTA & AP-NTSC>									
3 (8)	OP_DUMMY6	Not used	0	0	0	0	0	0	
2 (4)	OP_DUMMY7	Not used	0	0	0	0	0	0	
1 (2)	OP_DUMMY8	Not used	0	0	0	0	0	0	
0 (1)	OP_DUMMY9	Not used	0	0	0	0	0	0	
OP7:			**128**	**148**	**12**	**132**	**3**	**144**	

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction

The LC4.6 LCD TV is a global LCD TV for the year 2004. It is the successor of the LC03 LCD TV and covers screens size 30 inch (in 15:9 ratio) and has a new styling, called Disc.
This chassis has the following (new) features:

- **Audio**: The sound processor is part of the UOC processor (called “Hercules”). The chassis has a FM Radio with 40 preset channels.
- **Video**: Enhanced video features, video drivers, Active Control and multiple PIP.

The architecture consists of a TV and Scaler panel, I/O panel, Side I/O and Local Keyboard panel and Power Supply panel. The functions for video/audio processing, microprocessor (P), and CC/Teletext (TXT) decoder are all combined in one IC (TDA120xx, item 7011), the so-called third generation Ultimate One Chip (UOC-III) or “Hercules”. This chip has the following features:

- Control, small signal, mono/stereo, and extensive Audio/ Video switching in one IC.
- Upgrade with digital sound & video processing.
- Alignment free IF, including SECAM-L/L1 and AM.
- FM sound 4.5/5.5/6.0/6.5, no traps/bandpass filters.
- Full multi-standard colour decoder.
- One Xtal reference for all functions (microprocessor, RCP, TXT/CC, RDS, colour decoder, and stereo sound processor).

9.2 Block Diagram

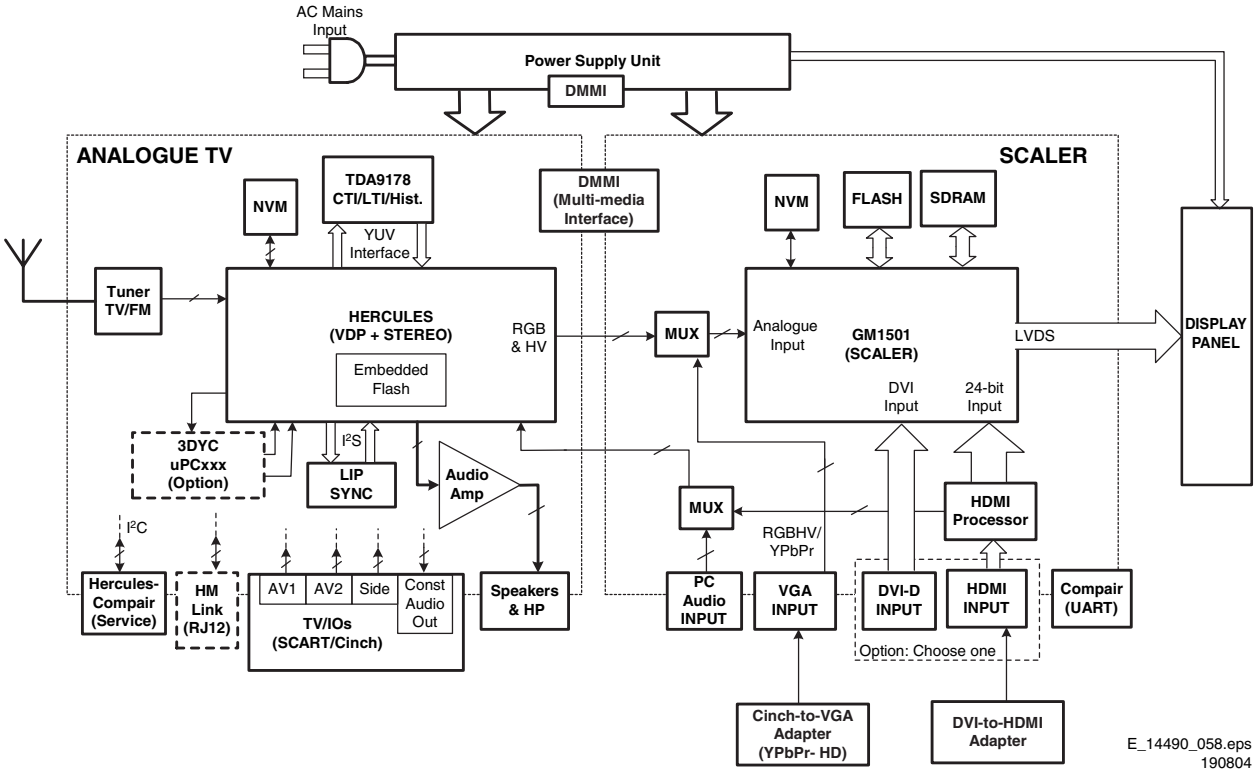


Figure 9-1 Block Diagram

The PLL tuner UR1316 (with FM radio) delivers the IF-signal, via audio & video SAW-filters, to the Video Signal Processor and FLASH embedded TEXT/Control/Graphics Micro Controller TDA120x1 (item 7011, also called Hercules). This IC has the following functions:

- Analogue Video Processing
- Sound Demodulation
- Audio Interfaces and switching
- Volume and tone control for loudspeakers
- Reflection and delay for loudspeaker channels
- Micro Controller
- Data Capture
- Display

The Hercules has one input for the internal CVBS signal and a video switch with 3 external CVBS inputs and a CVBS output. All CVBS inputs can be used as Y-input for Y/C signals. However, only 2 Y/C sources can be selected because the circuit has 2 chroma inputs. It is possible to add an additional CVBS(Y)/C input (CVBS/YX and CX) when the YUV interface and the RGB/YPRPB input are not needed. Two SCART-connectors are used: SCART1 is fully equipped and SCART2 is meant for VCR. Pin 10 of SCART2 is used for Easylink (P50) and there is a possibility for Y/C in. The CVBS-out on pin 19 can be used for WYSIWYR (What You See Is What You Record).

The video part delivers the RGB signals to the Scaler IC.

The Genesis GM1501 Malibu Scaler IC can receive two video input signals: SDTV (from Hercules), DVI (from external DVI source), or PC (from external computer).
After the video processing, the digital data is send via a Low Voltage Differential Signalling bus to the LCD panel. LVDS is used to improve data speed and to reduce EMI significantly. There are two I^2C lines and two interrupt and communication lines (TV_IRQ and TV_SC_COM) for the Scaler control. The Scaler communicates with the Hercules as a slave device. To avoid buffer overflow at the Scaler side, the TV_SC_COM line provides the necessary hardware flow control. To allow bi-directional communication, the Scaler can initiate a service interrupt-request to the Hercules via the TV_IRQ line.

The Hercules, and EEPROM are supplied with 3.3 V, which is also present during STANDBY.
The EEPROM, or NVM (Non Volatile Memory) is used to store the settings.

The sound part is built up around the Hercules. The Source Selection, Decoding and Processing are all done by the Hercules.

Power supply input are several DC voltages coming from a supply panel.

9.3 Power Supply LCD

See the FTL2.1 manual for a detailed description.

9.4 Input/Output

The I/O is divided over two parts: Rear I/O and Side I/O. The rear has two SCART inputs, a PC (VGA) input, a DVI input, and an Audio input. The side has a CVBS and Y/C (SVHS) input.

EXT1: The input of SCART1 is CVBS + RGB + L/R and the output is the video (+ sound) signal from the tuner (SC1_CVBS_RF_OUT).

EXT2: The input of SCART2 is Y/C + CVBS + L/R. The output signal is CVBS_SC2_MON_OUT (+ sound).
SCART2 is meant for VCR and has therefore some additional signals in relation to EXT1 but no RGB: it has the possibility for Y/C_in: Y_in on pin 20 and Chroma_in on pin 15.
The selection of the external I/O's is controlled by the Hercules.

PC (VGA) in: This input is directly going to the Scaler IC. See paragraph “Video: Scaler Part”.

9.5 Tuner and IF

A Philips UR13xx Tuner with second input (for FM Radio) is used in the TV board. The SIF and FM signals are decoded by the Hercules. Tuning is done via I^2C.

9.5.1 Video IF amplifier

The IF-filter is integrated in a SAW (Surface Acoustic Wave) filter. One for filtering IF-video (1328) and one for IF-audio (1330). The type of these filters is depending of the standard(s) that has to be received.

The output of the tuner is controlled via an IF-amplifier with AGC-control. This is a voltage feedback from pin 31 of the Hercules to pin 1 of the tuner. The AGC-detector operates on top sync and top white level. AGC take-over point is adjusted via the service alignment mode “Tuner” -”’AGC”. If there is too much noise in the picture, then it could be that the AGC setting is wrong. The AGC-setting could also be mis-aligned if the picture deforms with perfect signal; the IF-amplifier amplifies too much.

9.6 Video: TV Part (diagrams A1, A2, and A3)

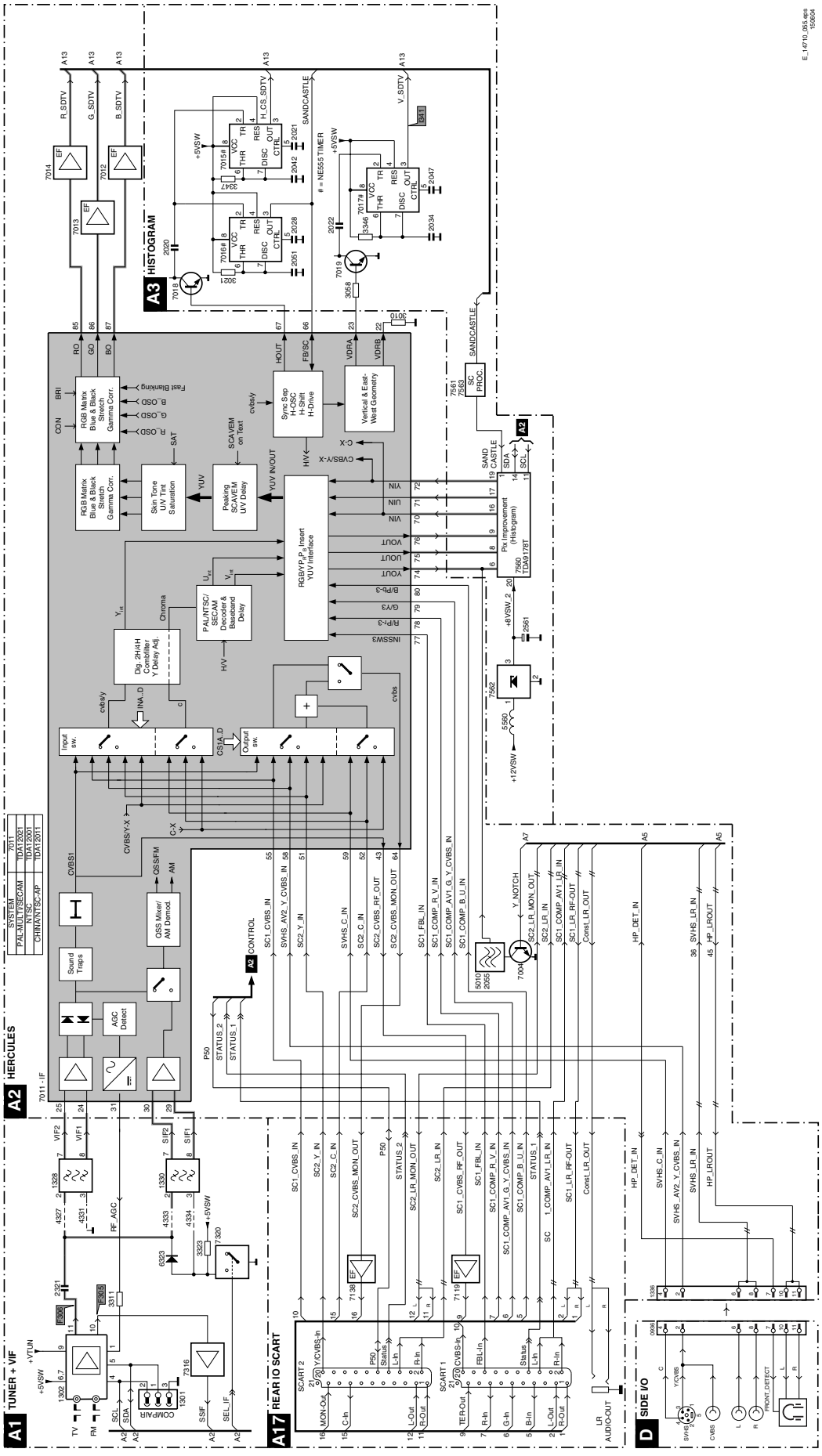


Figure 9-2 Block diagram video processing

The video processing is completely handled by the Hercules
- IF demodulator.
- Chrominance decoder
- Sync separator.
- Horizontal & vertical drive.
- RGB processing.
- CVBS and SVHS source select.

It has also build in features like:
- CTI.
- Black stretch.
- Blue stretch.
- White stretch.
- Slow start up.
- Dynamic skin tone correction etc.

Further, it also incorporates sound IF traps and filters, and requires only one crystal for all systems.

9.6.1 Histogram (YUV picture improvement) IC

The demodulated video-signal can be checked on pins 74, 75, and 76 of IC7011 and is fed to pins 70, 71, and 72. In this path, the Histogram IC TDA9171 is inserted.
This TDA9178 can control various picture improvements:
- Histogram processing.
- Colour transient improvement.
- Luminance transient improvement.
- Black and white stretch.
- Skin tone correction.
- Green enhancement.
- Blue stretch.
- Smart peaking.
- Video dependent coring.
- Colour dependent stretching.

Since the TDA9171 is connected to the Hercules, picture improvement works only for signals that are routed trough the Hercules and not for signals directly connected to the Scaler.

9.7 Video: Scaler Part (diagram A7 and A13)

The Genesis gm1501 Scaler is a dual channel graphics and video processing IC for LCD monitors and televisions incorporating Picture in Picture, up to SXGA output resolutions. The Scaler controls the display processing in an LCD TV, e.g. like the deflection circuit in a CRT-based TV. It controls all the view modes (e.g. like "zooming" and "shifting"). Features like PC (VGA) or HD inputs, are also handled by this part.

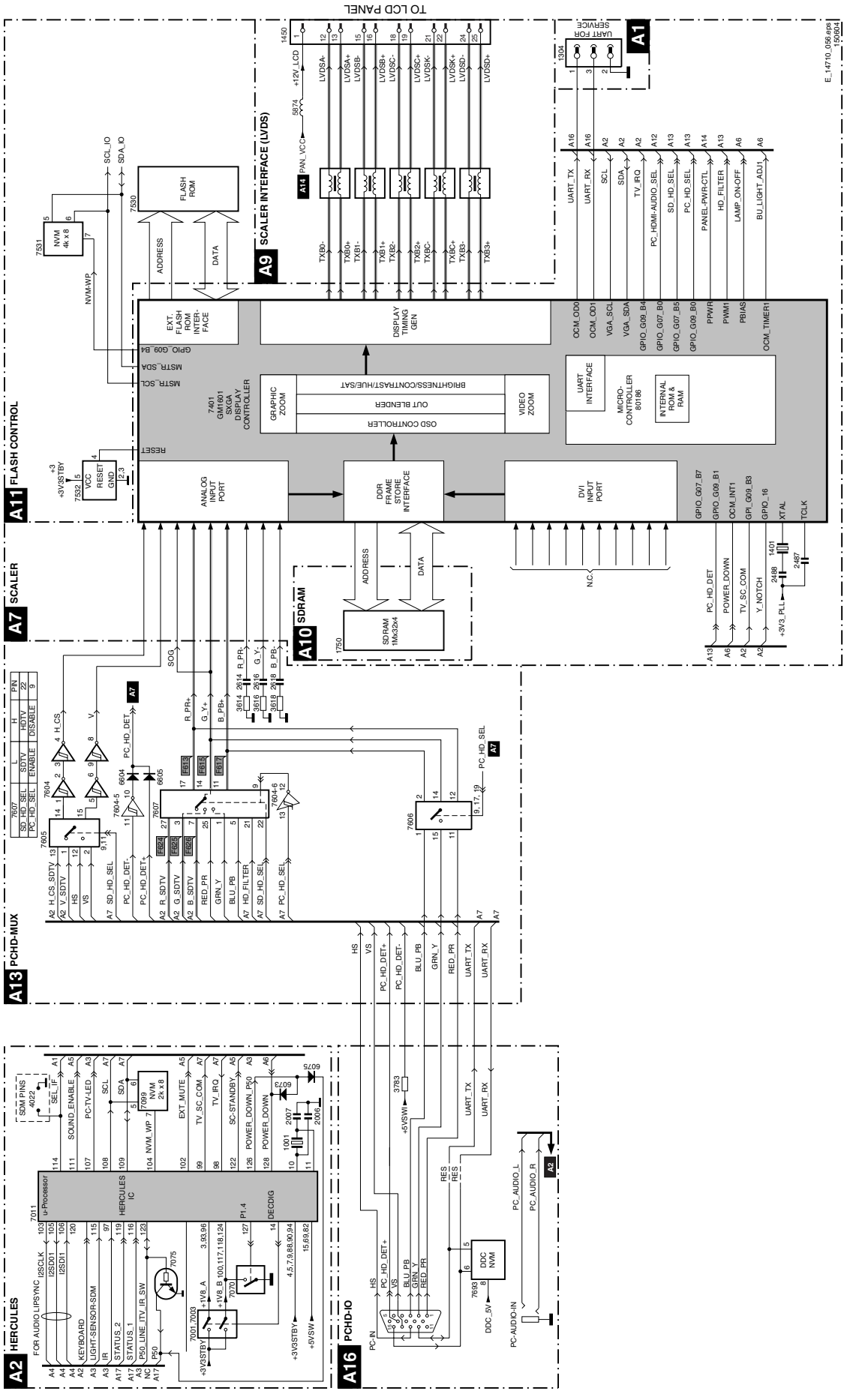


Figure 9-3 Block diagram Scaler Part

9.7.1 Features

The Scaler provides several key IC functions:
- Scaling.
- Auto-configuration/ Auto-Detection.
- Various Input Ports:
  - Analog RGB.
  - Video Graphics.
- Integrated LVDS Transmitter.
- On-chip Micro-controller

9.7.2 Inputs

Analog RGB
The RGB input is fed to pins B2, C2 and D2. This input consists of either the Hercules RGB output or the RGB/YpbPr input of the VGA connector. The Scaler can switch between the two signals via the PC_HD_SEL signal and selection IC SM5301.

PC (VGA) input
The VGA input is processed by the VGA block of the Scaler. The Scaler supports pixel frequencies up to 165MHz. YpbPr format is also supported via the VGA interface and covers a resolution of 480p/560p/720p/1080i.

9.7.3 Output

The Display Output Port provides data and control signals that permit the Scaler to connect to a variety of display devices using a TTL or LVDS interface. The output interface is configurable for single or dual wide TTL/LVDS in 18, 24 or 30-bit RGB pixels format. All display data and timing signals are synchronous with the DCLK output clock. The integrated LVDS transmitter is programmable to allow the data and control signals to be mapped into any sequence depending on the specified receiver format.

9.8 Audio Processing

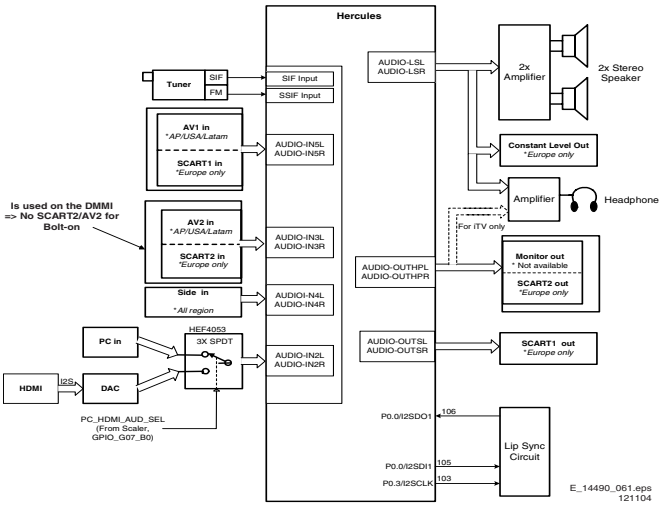


Figure 9-4 Block diagram audio processing

The audio decoding is done entirely via the Hercules. The IF output from the Tuner is fed directly to either the Video-IF or the Sound-IF input depending on the type of concept chosen. There are mainly two types of decoder in the Hercules, an analogue decoder that decodes only Mono, regardless of any standards, and a digital decoder (or DEMDEC) that can decode both Mono as well as Stereo, again regardless of any standards.

In this chassis, the analogue decoder is used in two cases:
- It is used for AM Sound demodulation in the Europe SECAM LL' transmission.
- It is used for all FM demodulation in AV-Stereo sets.

9.8.1 Diversity

The diversity for the Audio decoding can be broken up into two main concepts:
- The Quasi Split Sound concept used in Europe and some AP sets.
- The Inter Carrier concept, used in NAFTA and LATAM.

The UOC-III family makes no difference any more between QSS- and Intercarrier IF, nearly all types are software-switchable between the two SAW-filter constructions.

Simple data settings are required for the set to determine whether it is using the Inter Carrier or the QSS concept. These settings are done via the "QSS" and "FMI" bit found in SAM mode. Due to the diversity involved, the data for the 2 bits are being placed in the NVM location and it is required to write once during start-up.

On top of that, it can be further broken down into various systems depending on the region. The systems or region chosen, will in turn affect the type of sound standard that is/are allowed to be decoded.
- For the case of Europe, the standard consists of BG/DK/I/LL' for a Multi-System set. There are also versions of Eastern Europe and Western Europe set and the standard for decoding will be BG/DK and I/DK respectively. FM Radio is a feature diversity for the Europe sets. The same version can have either FM Radio or not, independent of the system (e.g. sets with BG/DK/I/LL' can have or not have FM radio).
- For the case of NAFTA and LATAM, there is only one transmission standard, which is the M standard. The diversity then will be based on whether it has a dBx noise reduction or a Non-dBx (no dBx noise reduction).
- For the case of AP, the standard consists of BG/DK/I/M for a Multi-System set. The diversity here will then depends on the region. AP China can have a Multi-System and I/DK version. For India, it might only be BG standard.

9.8.2 Functionality

The features available in the Hercules are as follows:
- Treble and Bass Control.
- Surround Sound Effect that includes:
  - Incredible Stereo.
  - Incredible Mono.
  - 3D Sound (not for AV Stereo).
  - TruSurround (not for AV Stereo).
  - Virtual Dolby Surround, VDS422 (not for AV Stereo).
  - Virtual Dolby Surround, VDS423 (not for AV Stereo).
  - Dolby Pro-Logic (not for AV Stereo).
- Bass Feature that includes:
  - Dynamic Ultra-Bass.
  - Dynamic Bass Enhancement.
  - BBE (not for AV Stereo).
- Auto-Volume Leveller.
- 5 Band Equalizer.
- Loudness Control.

All the features stated are available for the Full Stereo versions and limited features for the AV Stereo

9.8.3 Audio Amplifier

The audio amplifier part is very straightforward. It uses the integrated power amplifier TDA7297D, and delivers a maximum output of 2 x 15 W_{RMS}.
The maximum operating condition for this amplifier is 20 V unloaded. Normal operating supply is from 6.5 V to 18 V. Muting is done via the SOUND_ENABLE line connected to pin 13 of the amplifier-IC and coming from the Hercules.

9.8.4 Audio: Lip Sync (Optional)

A “lip sync” circuit with an audio delay can be added (not for all models/regions), in order to synchronise with video delay due to the complexity of the display processing. This video delay is significant, due to memory based processing. For instance, the “frame rate conversion” cause a delay of two frames, while the LCD panel response also cause a delay.

The circuit is a (16 bit) FIFO based digital delay. E.g.: the memory size required for a 80 ms delay (with a data clock of 1.024 MHz) can be calculated with: Memory size = delay time * f_clk. This gives: 80 ms * 1.024 MHz = 81920 bits.

To calculate the memory size for a 16 bits mode I2S digital audio stream we must use the following data:
- f_s = 32 kHz, 16 bits, stereo
- Data clock = 32 kHz * 16 * 2 = 1.024 MHz
- Memory size for 1 ms delay = 1 ms * 1.024 MHz = 1024 bits = 1 kbit

So, the delay time of 80 ms can be built with five steps of 16 ms, which is close to the frame rate. Therefore, a 128 kbit SRAM (16 x 8) is chosen.

Note that above described calculation is just an example, values in the set can deviate.

9.9 Control

9.9.1 Hercules

The System Board has two main micro-controllers on board. These are:
- On-chip x86 micro-controller (OCM) from Genesis LCD TV/ Monitor Controller.
- On-chip 80C51 micro-controller from Philips Semiconductor UOCIII (Hercules) series.

Each micro-controller has it own I^2C bus which host its own internal devices.
The Hercules is integrated with the Video and Audio Processor. For dynamic data storage, such as SMART PICTURE and SMART SOUND settings, an external NVM IC is being used. Another feature includes an optional Teletext/Closed Caption decoder with the possibility of different page storage depending on the Hercules type number.

The Micro Controller ranges in ROM from 128 kB with no TXT-decoder to 128 kB with a 10 page Teletext or with Closed Caption.

9.9.2 Block Diagram

The block diagram of the Micro Controller application is shown below.

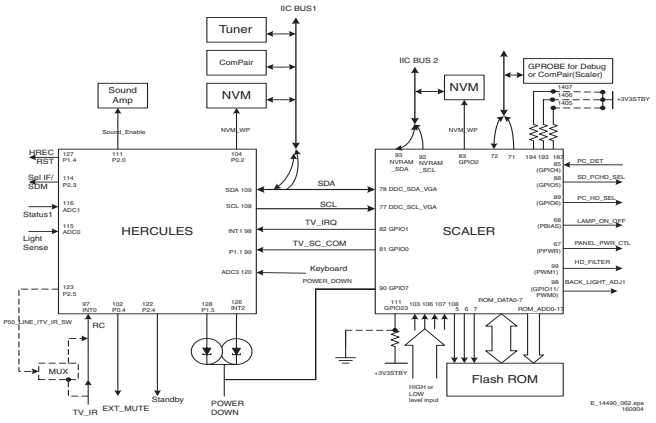


Figure 9-5 Micro Controller block diagram

9.9.3 Basic Specification

The Micro Controller operates at the following supply voltages:
- +3.3 V_{DC} at pins 4, 88, 94, and 109.
- +1.8 V_{DC} at pins 93, 96, and 117.
- I^2C pull up supply: +3.3V_{DC}.

9.9.4 Pin Configuration and Functionality

The ports of the Micro Controller can be configured as follows:
- A normal input port.
- An input ADC port.
- An output Open Drain port.
- An output Push-Pull port.
- An output PWM port.
- Input/Output Port

The following table shows the ports used for the L04 control:

Table 9-1 Micro Controller ports overview

Pin	Name	Description	Configuration
97	INT0/ P0.5	IR	INT0
98	P1.0/ INT1	TV_IRQ	INT2
99	P1.1/ T0	TV_SC_COM	P1.1
102	P0.4/ I^2SWS	EXT_MUTE	P0.4
103	P0.3/ I^2SCLK	Lip Sync	I^2SCLK
104	P0.2/ I^2SDO2	NVM_WP	P0.2
105	P0.1/ I^2SDO1	Lip Sync	I^2SDO1
106	P0.0/ I^2SDI/O	Lip Sync	I^2SDI/O
107	P1.3/ T1	PC-TV_LED	P1.3
108	P1.6/ SCL	SCL	SCL
109	P1.7/ SDA	SDA	SDA
111	P2.0/ TPWM	SOUND_ENABLE	P2.0
112	P2.1/ PWM0	(for future use)	-
113	P2.2/ PWM1	(for future use)	-
114	P2.3/ PWM2	SEL_IF	P2.3
115	P3.0/ ADC0	Light Sensor - SDM	ADC0
116	P3.1/ ADC1	STATUS_1	ADC1
119	P3.2/ ADC2	STATUS_2	ADC2
120	P3.3/ ADC3	KEYBOARD	ADC3
122	P2.4/ PWM3	STANDBY	P2.4
123	P2.5/ PWM4	(for future use)	-
126	P1.2/ INT2	(for future use)	-
127	P1.4/ RX	HERC_RESET	-
128	P1.5/ TX	POWER_DOWN	P1.5

The description of each functional pin is explained below:

- **LED.** This signal is used as an indication for the Stand-by, Remote and Error Indicator. Region diversity:
  - During protection mode, the LED blinks and the set is in stand-by mode.
  - During error conditions it blinks at a predefined rate.
  - After receiving a valid RC-5 or local keyboard command it flashes once.
  - For sets with error message indication, the LED blinks when message is active and the set is in stand-by mode.
- **SCL.** This is the clock wire of the two-wire single master bi-directional I^2C bus.
- **SDA.** This is the data wire of the two-wire single master bi-directional I^2C bus.
- **STANDBY.** The Hercules generates this signal. This can enable the power supply in normal operation and disable it during Stand-by. It is of logic “high” (3.3 V) under normal operation and “low” (0 V) during Stand-by.
- **IR.** This input pin is connected to an RC5 remote control receiver.
- **SEL-IF.** This is an output pin to switch the Video SAW filter between M system and other systems.
  - 0: NTSC M (default)
  - 1: PAL B/G, DK, I, L
- **NVM_WP.** The global protection line is used to enable and disable write protection to the NVM. When write to the NVM is required, pin 7 of the NVM must be pulled to logic ‘0’ first (via Write_Protect of the micro-controller pin) before a write is performed. Otherwise pin 7 of NVM must always be at logic “1”
  - 0: Disabled
  - 1: Enabled (default)
- **SOUND_ENABLE.** This pin is use to MUTE the audio amplifier. It is configured as push pull.
- **STATUS_1.** This signal is used to read the status of the SCART 1 input.
- **STATUS_2.** This signal is used to read the status of the SCART 2 input.
- **HERC_RESET.** This pin is use to switch the +1.8V supply.
- POWER_DOWN. The power supply generates this signal. Logic “high” (3.3 V) under normal operation of the TV and goes “low” (0 V) when the Mains input voltage supply goes below 70 V_{AC}.
- Keyboard. Following are the Keyboard functions and the step values (8 bit) for it.

Table 9-2 Local keyboard values

Function	Voltage (V_{DC})	Step values (8 bit)
NAFTA Stand-by	0	0 - 6
Ch +	0.43	7 - 33
Exit Factory (Ch- and Vol-)	0.69	34 - 53
Ch -	0.93	54 - 73
Menu (Vol - and Vol +)	1.19	74 - 96
Vol -	1.49	97 - 121
DVD Eject	1.8	122 - 147
Vol +	2.12	148 - 169

- **TV_IRQ.** This signal is the interrupt from the Scaler IC.
- **TV_SC_COM.** This signal is used for the communication with the Scaler IC.
- **EXT_MUTE.** This signal is used to reduce the Switch-off plop.

9.10 Abbreviation list

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
1080i	1080 visible lines, interlaced
1080p	1080 visible lines, progressive scan
2CS	2 Carrier Stereo
480i	480 visible lines, interlaced
480p	480 visible lines, progressive scan
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASD	Automatic Standard Detection
AV	Audio Video
B-SC1-IN	Blue SCART1 in
B-SC2-IN	Blue SCART2 in
B-TXT	Blue teletext
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BOCMA	Bimos one Chip Mid-end Architecture: video and chroma decoder
C-FRONT	Chrominance front input
CBA	Circuit Board Assembly (or PWB)
CL	Constant Level: audio output to connect with an external amplifier
CLUT	Colour Look Up Table
ComPair	Computer aided rePair
CSM	Customer Service Mode
CVBS	Composite Video Blanking and Synchronisation
CVBS-EXT	CVBS signal from external source (VCR, VCD, etc.)
CVBS-INT	CVBS signal from Tuner
CVBS-MON	CVBS monitor signal
CVBS-TER-OUT	CVBS terrestrial out
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DFU	Directions For Use: owner's manual
DNR	Dynamic Noise Reduction
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool: special (European) remote control designed for service technicians
DTS	Digital Theatre Sound
DVD	Digital Video Disc
EEPROM	Electrically Erasable and Programmable Read Only Memory
EPG	Electronic Program Guide: system used by broadcasters to transmit TV guide information (= NexTView)
EU	EUrope
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FBL	Fast Blanking: DC signal accompanying RGB signals
FBL-SC1-IN	Fast blanking signal for SCART1 in
FBL-SC2-IN	Fast blanking signal for SCART2 in
FBL-TXT	Fast Blanking Teletext
FLASH	FLASH memory

FM	Field Memory / Frequency Modulation
FMR	FM Radio
FRC	Frame Rate Converter
FRONT-C	Front input chrominance (SVHS)
FRONT-DETECT	Front input detection
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
G-SC1-IN	Green SCART1 in
G-SC2-IN	Green SCART2 in
G-TXT	Green teletext
H	H_sync to the module
HA	Horizontal Acquisition: horizontal sync pulse coming out of the BOCMA
HD	High Definition
HP	Head Phone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I^2C	Integrated IC bus
I^2S	Integrated IC Sound bus
IC	Integrated Circuit
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt ReQuest
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according the customers wishes
LATAM	LATin AMerica
LC04	Philips chassis name for LCD TV 2004 project
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LINE-DRIVE	Line drive signal
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Loud Speaker
LVDS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
MPEG	Motion Pictures Experts Group
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, used mainly in Europe.
NTSC	National Television Standard Committee. Colour system used mainly in North America and Japan. Colour carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory: IC containing TV related data (for example, options)
O/C	Open Circuit
ON/OFF LED	On/Off control signal for the LED
OSD	On Screen Display
P50	Project 50 communication: protocol between TV and peripherals
PAL	Phase Alternating Line. Colour system used mainly in Western Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PC	Personal Computer
PCB	Printed Circuit Board (or PWB)
PIG	Picture In Graphic
PIP	Picture In Picture
PLL	Phase Locked Loop. Used, for example, in FST tuning systems. The customer can directly provide the desired frequency
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PWB	Printed Wiring Board (or PCB)
RAM	Random Access Memory
RC	Remote Control transmitter
RC5	Remote Control system 5, the signal from the remote control receiver
RGB	Red, Green, and Blue. The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced.
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync
ROM	Read Only Memory
SAM	Service Alignment Mode
SIF	Sound Intermediate Frequency
SC	SandCastle: two-level pulse derived from sync signals
SC1-OUT	SCART output of the MSP audio IC
SC2-B-IN	SCART2 Blue in
SC2-C-IN	SCART2 chrominance in
SC2-OUT	SCART output of the MSP audio IC
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
SCL	CLock Signal on I^2C bus
SD	Standard Definition
SDA	DAta Signal on I^2C bus
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Colour system used mainly in France and Eastern Europe. Colour carriers = 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switch Mode Power Supply
SND	SouND
SNDL-SC1-IN	Sound left SCART1 in
SNDL-SC1-OUT	Sound left SCART1 out
SNDL-SC2-IN	Sound left SCART2 in
SNDL-SC2-OUT	Sound left SCART2 out
SNDR-SC1-IN	Sound right SCART1 in
SNDR-SC1-OUT	Sound right SCART1 out
SNDR-SC2-IN	Sound right SCART2 out
SNDR-SC2-OUT	Sound right SCART2 out
SNDS-VL-OUT	Surround sound left variable level out
SNDS-VR-OUT	Surround sound right variable level out
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
STBY	Stand-by
SVHS	Super Video Home System
SW	Sub Woofer / SoftWare
THD	Total Harmonic Distortion
TXT	TeleteXT
uP	Microprocessor
VA	Vertical Acquisition
VL	Variable Level out: processed audio output toward external amplifier
VCR	Video Cassette Recorder
VGA	Video Graphics Array
WD	Watch Dog

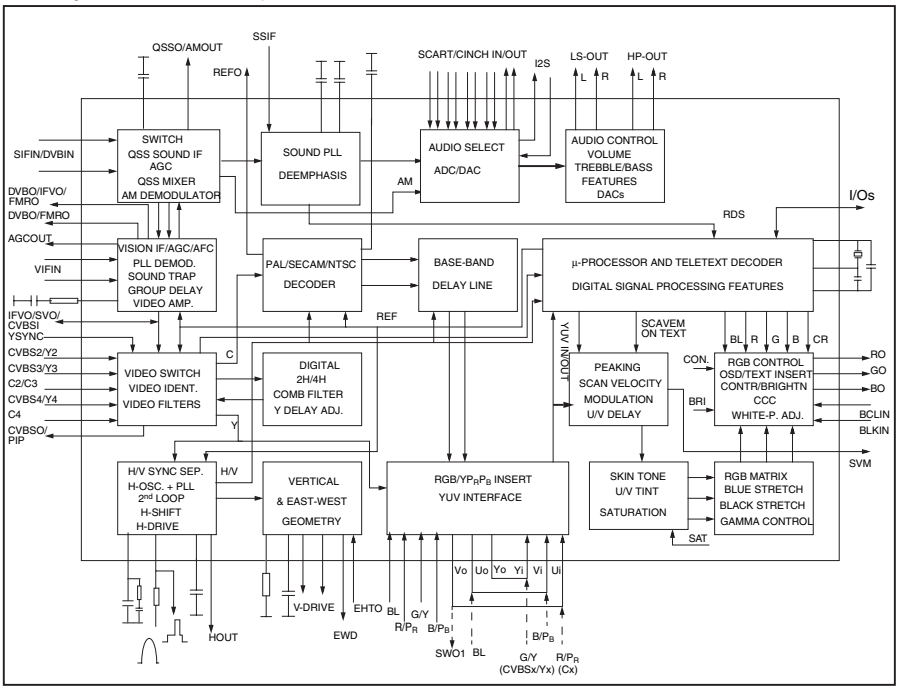
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
XTAL	Quartz crystal
YPbPr	Component video (Y= Luminance, Pb/Pr= Colour difference signals)
Y/C	Luminance (Y) and Chrominance (C) signal
Y-OUT	Luminance-signal
YUV	Component video

9.11 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.11.1 Diagram A2, Type TDA12029H (IC7011)

Block diagram of the “AV-stereo” TV processor with audio DSP



Pin configuration “stereo” and “AV-stereo” versions with Audio DSP

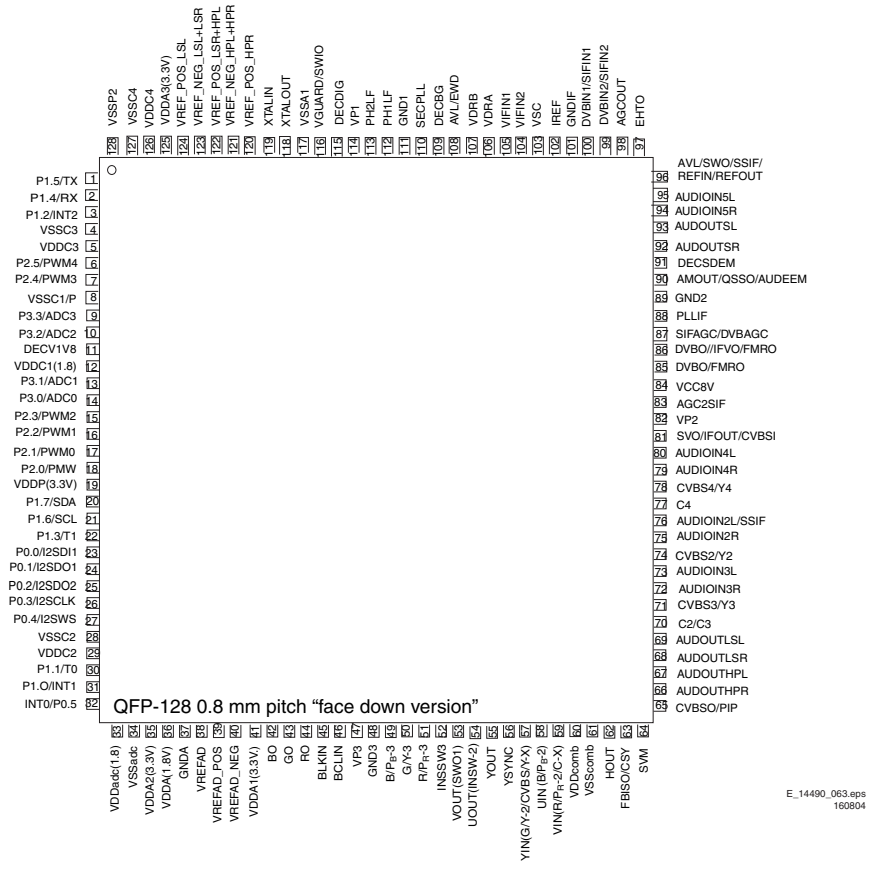
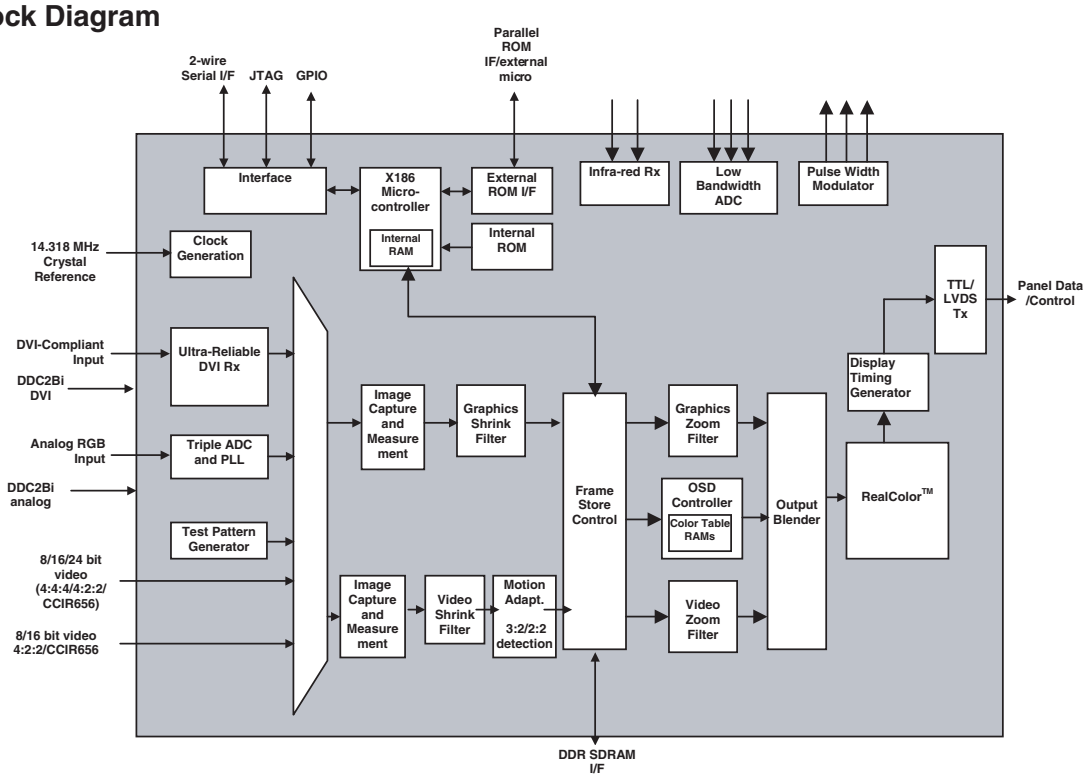


Figure 9-6 Internal Block Diagram and Pin Configuration

9.11.2 Diagram A7, Type GM1501 (IC7401)

Block Diagram



Pin Configuration

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	NC	ADC_3.3	ADC_1.8	ADC_1.8	ADC_DGND	RXC+	DVI_GND	RX0+	RX1+	RX2+	DVI_GND	LBADC_N3	D_GND
B	BLUE-	BLUE+	ADC_3.3	ADC_DGND	DVI_GND	RXC-	DVI_GND	RX0-	RX1-	RX2-	REXT	LBADC_N2	D_GND
C	GREEN-	GREEN+	SOG	ADC_AGND	NC	DVI_3.3	DVI_GND	DVI_3.3	DVI_3.3	DVI_3.3	DVI_3.3	LBADC_N1	LBADC_33
D	RED-	RED+	ADC_3.3	ADC_AGND	NC	DVI_1.8	DVI_GND	DVI_1.8	DVI_1.8	DVI_1.8	DVI_GND	LBADC_ RETURN	LBADC_GND
E	ADC_AGND	ADC_AGND	ADC_3.3	ADC_AGND									
F	NC	VDDD33_ PLL	VSSA33_ RPLL	VDDA33_ RPLL									
G	VDDA33_ FPLL	VSSD33_ PLL	TCLK	XTAL									
H	VDDD33_ SDDS	VSSA33_ SDDS	VDDA33_ SDDS	VSSA33_ FPLL									
J	VDDD33_ DDDS	VSSA33_ DDDS	VDDA33_ DDDS	VSSD33_ SDDS									
K	RESETn	ACS_ RSET_HD	NC	VSSD33_ DDDS						CORE_1.8	CORE_1.8	D_GND	D_GND
L	OCM_INT2	OCM_INT1	AVSYNC	AHSYNC						D_GND	CORE_1.8	D_GND	D_GND
M	OCM_UDO	OCM_UDI	IR0	IR1						D_GND	D_GND	D_GND	D_GND
N	VGA_SDA	VGA_SCL	DVI_SDA	DVI_SCL						D_GND	D_GND	D_GND	D_GND
P	OCM_CS1n	OCM_CS2n	MSTR_SDA	MSTR_SCL						D_GND	D_GND	D_GND	D_GND
R	ROM_CSn	OCM_REn	OCM_WEn	EXTCLK						D_GND	D_GND	D_GND	D_GND
T	OCMADDR 17	OCMADDR 18	OCMADDR 19	OCM_CS0n						D_GND	CORE_1.8	D_GND	D_GND
U	OCMADDR 13	OCMADDR 14	OCMADDR 15	OCMADDR 16						CORE_1.8	CORE_1.8	D_GND	D_GND
V	OCMADDR 9	OCMADDR 10	OCMADDR 11	OCMADDR 12									
W	OCMADDR 6	OCMADDR 7	OCMADDR 8	IO_3.3									
Y	OCMADDR 3	OCMADDR 4	OCMADDR 5	IO_3.3									
AA	OCMADDR 0	OCMADDR 1	OCMADDR 2	IO_3.3									
AB	OCMDATA13	OCMDATA14	OCMDATA15	IO_3.3									
AC	OCMDATA10	OCMDATA11	OCMDATA12	IO_3.3	GPIO_G09_ B2 (DEGRN0)	IO_3.3	DCLK	IO_3.3	GPIO_G07_ B2 (DERED4)	IO_3.3	SHIELD[1] (DEGRN3)	LVDSB_3.3	LVDSB_GND
AD	OCMDATA9	OCMDATA6	OCMDATA3	OCMDATA0	GPIO_G09_ B3 (DEGRN1)	GPIO_G08_ B0 (DORED0)	DEN	GPIO_G08_ B5 (DOBLU1)	GPIO_G07_ B3 (DERED5)	GPIO_G07_ B6 (DERED8)	SHIELD[2] (DEGRN4)	LVDSB_3.3	LVDSB_3.3
AE	OCMDATA8	OCMDATA5	OCMDATA2	GPIO_G09_ B0 (DERED0)	GPIO_G09_ B4 (DEBLU0)	GPIO_G08_ B1 (DORED1)	GPIO_G08_ B3 (DOGRN1)	GPIO_G07_ B0 (DERED2)	GPIO_G07_ B4 (DERED6)	GPIO_G07_ B7 (DERED9)	SHIELD[3] (DEGRN5)	BC+ (DEGRN8)	SHIELD[4] (DEBLU2)
AF	OCMDATA7	OCMDATA4	OCMDATA1	GPIO_G09_ B1 (DERED1)	GPIO_G09_ B5 (DEBLU1)	GPIO_G08_ B2 (DOGRN0)	GPIO_G08_ B4 (DOBLU0)	GPIO_G07_ B1 (DERED3)	GPIO_G07_ B5 (DERED7)	SHIELD[0] (DEGRN2)	B3+ (DEGRN6)	B3- (DEGRN7)	BC- (DEGRN9)

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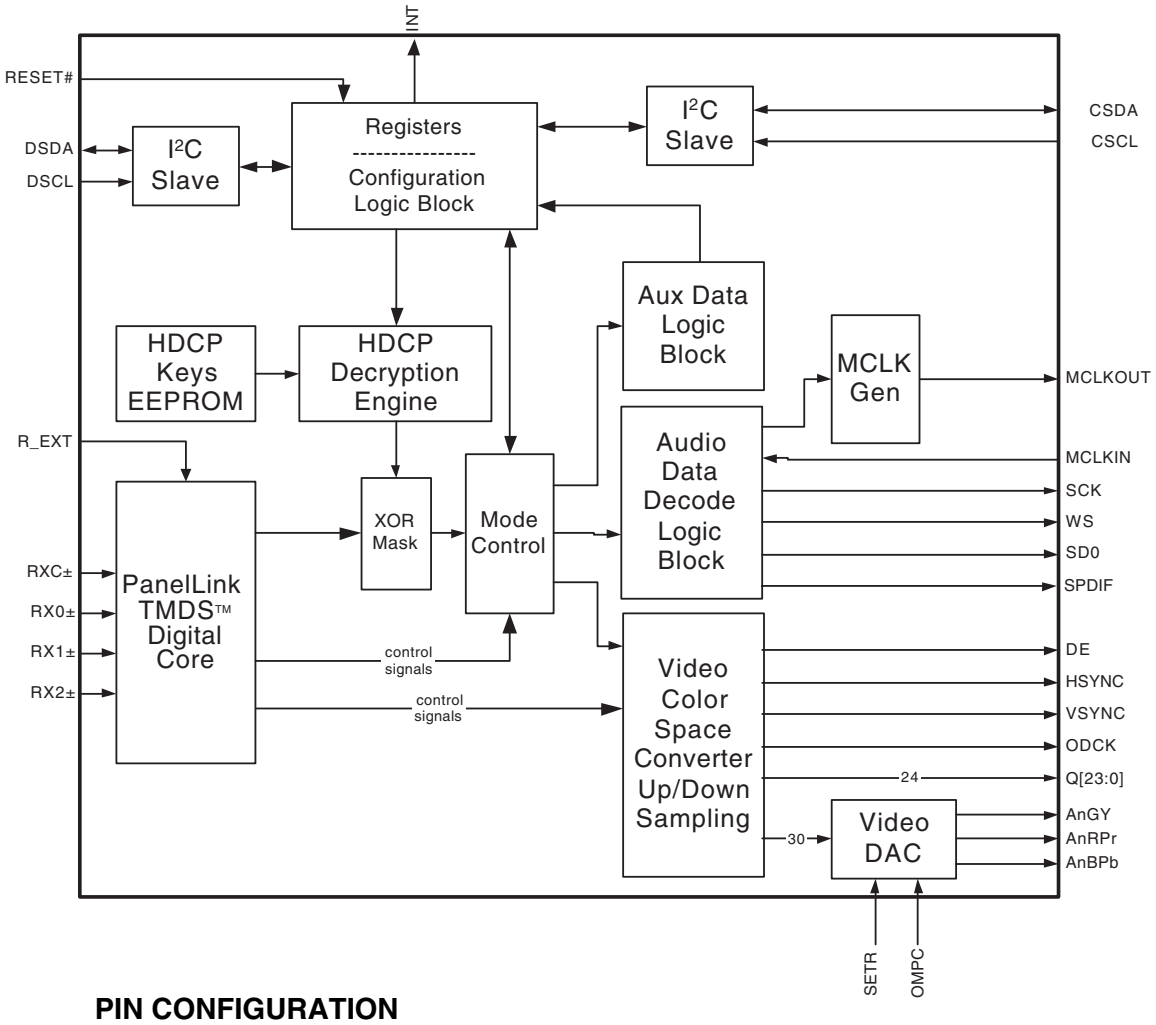
241204

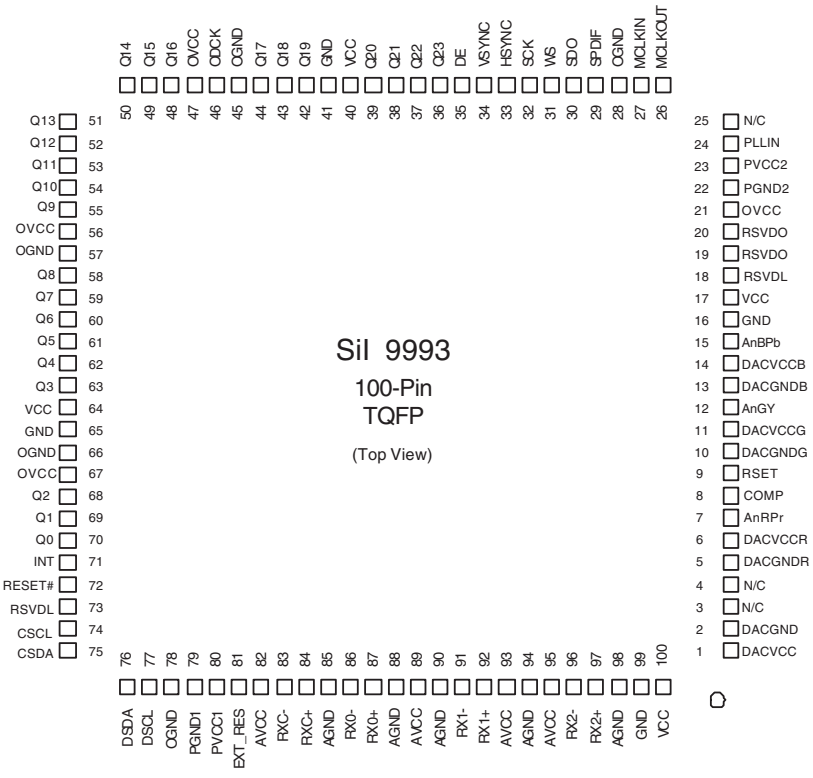
Figure 9-7 Internal Block Diagram and Pin Configuration

9.11.3 Diagram A12, Type Sil9993CT (IC7808)

BLOCK DIAGRAM



PIN CONFIGURATION



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090804

Figure 9-8 Internal Block Diagram

10. Spare Parts List

Set Level

Various

1004⚠	9322 199 94682	LCD LC300W01A5 (LPL)
1004⚠	9322 206 53682	LCD LC300W01C5 (LPL)
1004⚠	9322 213 33682	LCD T296XW01V3(AUO)
1116	3104 328 26371	Side I/O assy LCD
8302	3104 311 04731	Cable 7p/560/7p
8303	3104 311 06511	Cable 10p/280/10p
8304	3104 311 08271	Cable 4p/340/4p
8305	3104 311 08411	Cable 3P/340/3P
8306	3104 311 01431	Cable 2P3/340/2P3
8307	3104 311 08371	Cable 4p/340/4p
8309	3104 311 08301	Cable 3p/340/3p
8312	3104 311 06361	Cable 15p/340/16p (LPL)
8313	3104 311 08791	Cable 15p/120/16p (LPL)
8315	3104 311 06511	Cble 10p/280/10p (AUO)
8317	3104 311 03611	Cble 12p/280/12p (AUO)
8346	3104 311 07001	Cable 11p/400/11p
8350	3104 311 08611	Cable 31p/120/20p DF19
8352	3104 311 06811	Cable 9p340/9p

Small Signal Board [A]

Various

0601	3104 317 07831	SW (check Prod. Survey)
1001	2422 543 01414	Crystal 24M576
1101	2422 025 18133	Socket 21p f
1102	2422 025 18133	Socket 21p f
1105	2422 026 05462	Socket CHINCH 4p f
1301	2422 025 16835	Connector 3p m
1302⚠	3139 147 19801	Tuner U+V PLL BGHIL
1328	2422 549 44372	SAW 38.9MHz K3953L
1330	2422 549 44369	SAW 38.9MHz K9656L
1336	2422 025 10655	Connector 11p m
1401	2422 543 01133	Xtal 14.32MHz 20pF
1402	2422 025 10768	Connector 3p m
1450	2422 025 18427	Connector 31p f
1681	2422 025 16835	Connector 3p m
1687	2438 031 00416	Connector 15p f
1752	2422 025 10769	Connector 9p m
1860	2422 549 45325	Bead 67Ω at 100MHz
1861	2422 549 45325	Bead 67Ω at 100MHz
1862	2422 549 45325	Bead 67Ω at 100MHz
1863	2422 549 45325	Bead 67Ω at 100MHz
1864	2422 549 45325	Bead 67Ω at 100MHz
8308	3104 311 07691	Cable 2P3/280/INLET

⊣⊢

2000	2022 552 05682	2.2µF 10% 6.3V
2001	2020 552 96718	220nF 10% 6.3V 0402
2002	4822 124 23002	10µF 16V
2003	2238 869 15109	10pF 5% 50V 0402
2004	2020 552 96718	220nF 10% 6.3V 0402
2005	3198 035 71040	100nF 10% 16V 0402
2006	3198 034 06880	6.8pF 1% 50V 0402
2007	3198 034 06880	6.8pF 1% 50V 0402
2008	3198 017 44740	470nF 10V 0603
2009	3198 017 41050	1µF 10V 0603
2010	3198 035 26820	6.8nF 10% 16V 0402
2011	2020 552 96718	220nF 10% 6.3V 0402
2012	4822 124 12095	100µF 20% 16V
2013	3198 035 71040	100nF 10% 16V 0402
2014	3198 035 71040	100nF 10% 16V 0402
2015	3198 035 71040	100nF 10% 16V 0402
2016	3198 035 71040	100nF 10% 16V 0402
2017	3198 035 71040	100nF 10% 16V 0402
2018	3198 035 71040	100nF 10% 16V 0402
2019	4822 124 80151	47µF 16V
2020	2238 869 15101	100pF 5% 50V 0402
2021	2020 552 96628	10nF 10% 16V 0402
2022	3198 035 02210	220pF 5% 50V 0402
2023	3198 035 71040	100nF 10% 16V 0402
2024	4822 124 12095	100µF 20% 16V
2025	3198 035 71040	100nF 10% 16V 0402
2026	3198 035 71040	100nF 10% 16V 0402
2027	3198 035 71040	100nF 10% 16V 0402
2028	2020 552 96628	10nF 10% 16V 0402
2029	3198 035 71040	100nF 10% 16V 0402
2030	3198 035 71040	100nF 10% 16V 0402
2031	3198 035 71040	100nF 10% 16V 0402
2032	3198 035 71040	100nF 10% 16V 0402
2033	2020 552 96718	220nF 10% 6.3V 0402
2034	2020 552 00002	3.3nF 2% 50V 0805
2035	2020 552 96656	10µF 20% 25V 1210
2036	2020 552 96807	1µF 10% 10V 0603
2037	2020 552 96807	1µF 10% 10V 0603
2040	4822 124 23002	10µF 16V
2041	2020 552 96718	220nF 10% 6.3V 0402
2042	2020 552 00002	3.3nF 2% 50V 0805
2043	3198 035 71040	100nF 10% 16V 0402
2044	2020 552 96718	220nF 10% 6.3V 0402
2045	2238 869 15109	10pF 5% 50V 0402
2046	2238 869 15109	10pF 5% 50V 0402
2047	2020 552 96628	10nF 10% 16V 0402
2048	2238 869 15109	10pF 5% 50V 0402
2049	2238 869 15109	10pF 5% 50V 0402
2050	2238 869 15109	10pF 5% 50V 0402
2051	2020 552 00002	3.3nF 2% 50V 0805
2053	2020 552 96618	1nF 10% 50V 0402
2054	2020 552 96632	22nF 10% 16V 0402
2055	4822 126 14519	22pF 5% 50V 0402
2056	3198 035 71040	100nF 10% 16V 0402
2057	2238 869 15109	10pF 5% 50V 0402
2058	2238 869 15109	10pF 5% 50V 0402
2059	2238 869 15109	10pF 5% 50V 0402
2060	3198 035 71040	100nF 10% 16V 0402
2061	4822 124 23002	10µF 16V
2062	2238 869 15109	10pF 5% 50V 0402
2063	3198 017 31540	150nF 10V 0603
2064	3198 017 41050	1µF 10V 0603
2067	2238 869 15109	10pF 5% 50V 0402
2068	2020 552 96718	220nF 10% 6.3V 0402
2069	2238 869 15109	10pF 5% 50V 0402
2070	2020 552 96834	1µF 20% 6.3V 0402
2071	4822 124 12095	100µF 20% 16V
2072	4822 126 14076	220nF +80/-20% 25V
2073	2020 552 96618	1nF 10% 50V 0402
2074	2020 552 96718	220nF 10% 6.3V 0402
2076	2020 552 96718	220nF 10% 6.3V 0402
2077	2020 552 96834	1µF 20% 6.3V 0402
2078	2238 869 15101	100pF 5% 50V 0402
2079	2238 869 15109	10pF 5% 50V 0402
2080	2238 869 15109	10pF 5% 50V 0402
2081	2238 869 15109	10pF 5% 50V 0402
2082	2020 552 96618	1nF 10% 50V 0402
2084	2020 552 96718	220nF 10% 6.3V 0402
2085	2020 552 96618	1nF 10% 50V 0402
2086	2020 552 96618	1nF 10% 50V 0402
2087	2238 869 15109	10pF 5% 50V 0402
2088	2238 869 15109	10pF 5% 50V 0402
2089	2020 552 96618	1nF 10% 50V 0402
2090	2238 869 15109	10pF 5% 50V 0402
2091	2238 869 15109	10pF 5% 50V 0402
2092	2238 869 15109	10pF 5% 50V 0402
2093	2238 869 15109	10pF 5% 50V 0402
2094	2238 869 15109	10pF 5% 50V 0402
2095	2238 869 15109	10pF 5% 50V 0402
2096	2238 869 15109	10pF 5% 50V 0402
2097	2238 869 15109	10pF 5% 50V 0402
2098	2238 869 15109	10pF 5% 50V 0402
2099	2020 552 96618	1nF 10% 50V 0402
2101	4822 126 14241	330pF 0603 50V
2103	4822 126 14241	330pF 0603 50V
2104	2020 552 96807	1µF 10% 10V 0603
2105	4822 126 14241	330pF 0603 50V
2107	4822 126 14241	330pF 0603 50V
2108	2020 552 96807	1µF 10% 10V 0603
2109	4822 126 13881	470pF 5% 50V
2110	4822 126 13881	470pF 5% 50V
2111	4822 126 13881	470pF 5% 50V
2112	4822 126 13881	470pF 5% 50V
2127	4822 126 14241	330pF 0603 50V
2128	2020 552 96807	1µF 10% 10V 0603
2129	4822 126 14241	330pF 0603 50V
2131	4822 126 14241	330pF 0603 50V
2132	2020 552 96807	1µF 10% 10V 0603
2133	4822 126 14241	330pF 0603 50V
2134	4822 126 13881	470pF 5% 50V
2135	4822 126 13881	470pF 5% 50V
2136	4822 126 13881	470pF 5% 50V
2137	4822 126 13881	470pF 5% 50V
2138	3198 017 41050	1µF 10V 0603
2152	4822 126 14241	330pF 0603 50V
2155	4822 126 14241	330pF 0603 50V
2169	4822 124 23002	10µF 16V
2251	2238 869 15109	10pF 5% 50V 0402
2252	2238 869 15109	10pF 5% 50V 0402
2253	4822 124 23002	10µF 16V
2254	4822 124 23002	10µF 16V
2262	4822 124 80151	47µF 16V
2263	2020 552 96656	10µF 20% 25V 1210
2264	2020 552 96656	10µF 20% 25V 1210
2265	3198 035 02210	220pF 5% 50V 0402
2266	2020 552 96632	22nF 10% 16V 0402
2268	2020 012 93795	470µF 20% 16V
2269	2020 012 93795	470µF 20% 16V
2271	2020 552 96628	10nF 10% 16V 0402
2302	4822 122 33761	22pF 5% 50V
2303	4822 122 33761	22pF 5% 50V
2307	3198 024 44730	47nF 50V 0603
2308	3198 030 82280	2.2µF 20% 50V
2309	2020 021 91871	470µF 20% 16V
2311	4822 124 12095	100µF 20% 16V
2321	5322 126 11583	10nF 10% 50V 0603
2324	5322 126 11583	10nF 10% 50V 0603
2355	3198 030 82280	2.2µF 20% 50V
2356	3198 030 82280	2.2µF 20% 50V
2357	3198 035 71040	100nF 10% 16V 0402
2358	2020 552 96625	3.3nF 10% 50V 0402
2359	2020 552 96628	10nF 10% 16V 0402
2370	2020 552 96834	1µF 20% 6.3V 0402
2371	2020 552 96834	1µF 20% 6.3V 0402
2372	2020 552 96618	1nF 10% 50V 0402
2373	2020 552 96618	1nF 10% 50V 0402
2374	3198 035 71040	100nF 10% 16V 0402
2375	4822 124 12082	10µF 20% 50V
2376	3198 017 41050	1µF 10V 0603
2377	3198 017 41050	1µF 10V 0603
2378	2020 552 96718	220nF 10% 6.3V 0402
2380	4822 124 12095	100µF 20% 16V
2381	3198 035 71040	100nF 10% 16V 0402
2382	2020 021 91871	470µF 20% 16V
2386	3198 017 41050	1µF 10V 0603
2387	4822 126 14324	33pF 5% 50V 0402
2388	4822 126 14324	33pF 5% 50V 0402
2392	3198 017 41050	1µF 10V 0603
2394	3198 035 71040	100nF 10% 16V 0402
2395	3198 035 71040	100nF 10% 16V 0402
2396	4822 124 23002	10µF 16V
2397	2020 552 96834	1µF 20% 6.3V 0402
2398	2020 552 96834	1µF 20% 6.3V 0402
2401	4822 124 80151	47µF 16V
2402	4822 124 80151	47µF 16V
2403	3198 035 71040	100nF 10% 16V 0402
2404	3198 035 71040	100nF 10% 16V 0402
2405	3198 035 71040	100nF 10% 16V 0402
2406	3198 035 71040	100nF 10% 16V 0402
2407	3198 035 71040	100nF 10% 16V 0402
2408	3198 035 71040	100nF 10% 16V 0402
2409	3198 035 71040	100nF 10% 16V 0402
2410	3198 035 71040	100nF 10% 16V 0402
2411	3198 035 71040	100nF 10% 16V 0402
2412	3198 035 71040	100nF 10% 16V 0402
2413	3198 035 71040	100nF 10% 16V 0402
2414	3198 035 71040	100nF 10% 16V 0402
2415	3198 035 71040	100nF 10% 16V 0402
2416	3198 035 71040	100nF 10% 16V 0402
2417	4822 124 80151	47µF 16V
2418	4822 124 80151	47µF 16V
2419	3198 035 71040	100nF 10% 16V 0402
2420	3198 035 71040	100nF 10% 16V 0402
2421	3198 035 71040	100nF 10% 16V 0402
2422	3198 035 71040	100nF 10% 16V 0402
2423	3198 035 71040	100nF 10% 16V 0402
2424	3198 035 71040	100nF 10% 16V 0402
2425	3198 035 71040	100nF 10% 16V 0402
2426	3198 035 71040	100nF 10% 16V 0402
2427	3198 035 71040	100nF 10% 16V 0402
2428	3198 035 71040	100nF 10% 16V 0402
2429	3198 035 71040	100nF 10% 16V 0402
2430	3198 035 71040	100nF 10% 16V 0402
2431	3198 035 71040	100nF 10% 16V 0402
2432	3198 035 71040	100nF 10% 16V 0402
2433	3198 035 71040	100nF 10% 16V 0402
2434	4822 124 80151	47µF 16V
2435	4822 124 80151	47µF 16V
2436	3198 035 71040	100nF 10% 16V 0402
2437	3198 035 71040	100nF 10% 16V 0402
2438	3198 035 71040	100nF 10% 16V 0402
2439	3198 035 71040	100nF 10% 16V 0402
2440	3198 035 71040	100nF 10% 16V 0402
2441	3198 035 71040	100nF 10% 16V 0402
2442	3198 035 71040	100nF 10% 16V 0402
2443	3198 035 71040	100nF 10% 16V 0402
2444	3198 035 71040	100nF 10% 16V 0402
2445	3198 035 71040	100nF 10% 16V 0402
2446	3198 035 71040	100nF 10% 16V 0402
2447	3198 035 71040	100nF 10% 16V 0402
2448	3198 035 71040	100nF 10% 16V 0402
2449	3198 035 71040	100nF 10% 16V 0402

2450	3198 035 71040	100nF 10% 16V 0402
2451	4822 124 80151	47µF 16V
2452	3198 035 71040	100nF 10% 16V 0402
2453	3198 035 71040	100nF 10% 16V 0402
2454	3198 035 71040	100nF 10% 16V 0402
2455	3198 035 71040	100nF 10% 16V 0402
2456	3198 035 71040	100nF 10% 16V 0402
2461	3198 035 71040	100nF 10% 16V 0402
2462	3198 035 71040	100nF 10% 16V 0402
2463	3198 035 71040	100nF 10% 16V 0402
2464	3198 035 71040	100nF 10% 16V 0402
2465	5322 124 41945	22µF 20% 35V
2466	3198 035 71040	100nF 10% 16V 0402
2467	3198 035 71040	100nF 10% 16V 0402
2468	3198 035 71040	100nF 10% 16V 0402
2469	3198 035 71040	100nF 10% 16V 0402
2470	5322 124 41945	22µF 20% 35V
2471	3198 035 71040	100nF 10% 16V 0402
2472	3198 035 71040	100nF 10% 16V 0402
2473	3198 035 71040	100nF 10% 16V 0402
2474	3198 035 71040	100nF 10% 16V 0402
2475	3198 035 71040	100nF 10% 16V 0402
2476	3198 035 71040	100nF 10% 16V 0402
2477	3198 035 71040	100nF 10% 16V 0402
2478	5322 124 41945	22µF 20% 35V
2479	3198 035 71040	100nF 10% 16V 0402
2480	3198 035 71040	100nF 10% 16V 0402
2481	3198 035 71040	100nF 10% 16V 0402
2482	5322 124 41945	22µF 20% 35V
2483	3198 035 71040	100nF 10% 16V 0402
2484	3198 035 71040	100nF 10% 16V 0402
2485	3198 035 71040	100nF 10% 16V 0402
2486	3198 035 71040	100nF 10% 16V 0402
2487	4822 126 14519	22pF 5% 50V 0402
2488	4822 126 14519	22pF 5% 50V 0402
2490	2238 586 59812	100nF 20% 50V 0603
2491	2238 586 59812	100nF 20% 50V 0603
2492	2238 586 59812	100nF 20% 50V 0603
2493	2020 552 96807	1µF 10% 10V 0603
2495	4822 124 80151	47µF 16V
2496	3198 035 71040	100nF 10% 16V 0402
2501	4822 124 80151	47µF 16V
2502	4822 124 11131	47µF 6.3V
2503	3198 035 71040	100nF 10% 16V 0402
2504	3198 035 71040	100nF 10% 16V 0402
2505	3198 035 71040	100nF 10% 16V 0402
2506	3198 035 71040	100nF 10% 16V 0402
2507	3198 035 71040	100nF 10% 16V 0402
2508	3198 035 71040	100nF 10% 16V 0402
2509	3198 035 71040	100nF 10% 16V 0402
2510	3198 035 71040	100nF 10% 16V 0402
2511	3198 035 71040	100nF 10% 16V 0402
2512	3198 035 71040	100nF 10% 16V 0402
2513	3198 035 71040	100nF 10% 16V 0402
2514	3198 035 71040	100nF 10% 16V 0402
2515	3198 035 71040	100nF 10% 16V 0402
2516	3198 035 71040	100nF 10% 16V 0402
2517	3198 035 71040	100nF 10% 16V 0402
2526	5322 124 41945	22µF 20% 35V
2530	4822 124 23002	10µF 16V
2531	3198 035 71040	100nF 10% 16V 0402
2532	3198 035 71040	100nF 10% 16V 0402
2533	3198 035 71040	100nF 10% 16V 0402
2560	3198 035 71040	100nF 10% 16V 0402
2561	4822 124 12095	100µF 20% 16V
2562	3198 035 71040	100nF 10% 16V 0402
2563	3198 035 14720	4.7nF 5% 25V 0402
2564	2020 552 96656	10µF 20% 25V 1210
2580	3198 035 71040	100nF 10% 16V 0402
2581	3198 035 71040	100nF 10% 16V 0402
2582	3198 035 71040	100nF 10% 16V 0402
2583	3198 035 71040	100nF 10% 16V 0402
2584	3198 035 71040	100nF 10% 16V 0402
2585	2238 869 75829	82pF 5% 50V 0402
2586	2238 869 75829	82pF 5% 50V 0402
2587	3198 035 03310	330pF 5% 50V 0402
2588	3198 035 04710	470pF 50V 0402
2605	3198 035 71040	100nF 10% 16V 0402
2606	3198 035 71040	100nF 10% 16V 0402
2607	3198 035 71040	100nF 10% 16V 0402
2608	3198 035 71040	100nF 10% 16V 0402
2609	3198 035 71040	100nF 10% 16V 0402
2610	3198 035 71040	100nF 10% 16V 0402
2611	4822 124 11131	47µF 6.3V
2612	2020 552 96628	10nF 10% 16V 0402
2613	2020 552 96628	10nF 10% 16V 0402
2614	2020 552 96628	10nF 10% 16V 0402
2615	2020 552 96628	10nF 10% 16V 0402
2616	2020 552 96628	10nF 10% 16V 0402
2617	2020 552 96628	10nF 10% 16V 0402
2618	2020 552 96628	10nF 10% 16V 0402
2619	4822 126 14324	33pF 5% 50V 0402
2620	2020 552 96807	1µF 10% 10V 0603
2621	2020 552 96834	1µF 20% 6.3V 0402
2622	2020 552 96834	1µF 20% 6.3V 0402
2623	2020 552 96834	1µF 20% 6.3V 0402
2624	3198 017 44740	470nF 10V 0603
2625	3198 017 44740	470nF 10V 0603
2626	3198 017 44740	470nF 10V 0603
2630	2020 552 96834	1µF 20% 6.3V 0402
2631	2020 552 96834	1µF 20% 6.3V 0402
2632	2020 552 96834	1µF 20% 6.3V 0402
2633	2020 552 96834	1µF 20% 6.3V 0402
2634	2020 552 96834	1µF 20% 6.3V 0402
2635	2020 552 96834	1µF 20% 6.3V 0402
2636	3198 035 71040	100nF 10% 16V 0402
2681	2020 552 94427	100pF 5% 50V
2686	2020 552 94427	100pF 5% 50V
2688	2238 586 59812	100nF 20% 50V 0603
2693	2238 586 59812	100nF 20% 50V 0603
2698	2020 552 94427	100pF 5% 50V
2699	2020 552 94427	100pF 5% 50V
2702	2020 552 96834	1µF 20% 6.3V 0402
2707	2020 021 91871	470µF 20% 16V
2708	2020 552 96834	1µF 20% 6.3V 0402
2710	3198 035 04710	470pF 50V 0402
2711	3198 035 04710	470pF 50V 0402
2713	2238 586 59812	100nF 20% 50V 0603
2714	2020 021 91871	470µF 20% 16V
2715	2020 021 91871	470µF 20% 16V
2719	2238 586 59812	100nF 20% 50V 0603
2720	2238 869 15109	10pF 5% 50V 0402
2743	2020 552 96834	1µF 20% 6.3V 0402
2744	2020 552 96834	1µF 20% 6.3V 0402
2747	2238 869 15101	100pF 5% 50V 0402
2748	2238 869 15101	100pF 5% 50V 0402
2749	2238 869 15101	100pF 5% 50V 0402
2750	2238 869 15101	100pF 5% 50V 0402
2784	4822 126 14241	330pF 0603 50V
2785	4822 126 14241	330pF 0603 50V
2847	3198 017 41050	1µF 10V 0603
2848	3198 017 41050	1µF 10V 0603
2860	2238 869 15109	10pF 5% 50V 0402
2861	2238 869 15109	10pF 5% 50V 0402
2862	2238 869 15109	10pF 5% 50V 0402
2863	2238 869 15109	10pF 5% 50V 0402
2864	2238 869 15109	10pF 5% 50V 0402
2865	2238 869 15109	10pF 5% 50V 0402
2866	2238 869 15109	10pF 5% 50V 0402
2867	2238 869 15109	10pF 5% 50V 0402
2868	2238 869 15109	10pF 5% 50V 0402
2869	2238 869 15109	10pF 5% 50V 0402
2874	2238 869 15109	10pF 5% 50V 0402
2875	2238 869 15109	10pF 5% 50V 0402
2876	2020 552 96628	10nF 10% 16V 0402
2877	2238 869 15109	10pF 5% 50V 0402
2878	2020 552 96628	10nF 10% 16V 0402
2879	2020 552 96628	10nF 10% 16V 0402
2880	2238 869 15109	10pF 5% 50V 0402
2881	2020 552 96628	10nF 10% 16V 0402
2883	2238 869 15109	10pF 5% 50V 0402
2884	2020 552 96628	10nF 10% 16V 0402
2887	2238 869 15109	10pF 5% 50V 0402
2910	3198 035 04710	470pF 50V 0402
2911	3198 030 72290	22µF 20% 35V
2920	4822 124 80151	47µF 16V
2921	4822 124 80151	47µF 16V
2930	2020 021 91871	470µF 20% 16V
2931	3198 035 04710	470pF 50V 0402
2933	2020 021 91871	470µF 20% 16V
2934	2020 552 96793	4.7nF 10% 50V 0402
2935	2020 021 91871	470µF 20% 16V
2953	2020 021 91871	470µF 20% 16V
2955	3198 035 14720	4.7nF 5% 25V 0402
2956	3198 035 02210	220pF 5% 50V 0402
2957	2020 021 91871	470µF 20% 16V
2958	2020 021 91871	470µF 20% 16V
2960	4822 124 80151	47µF 16V
2961	3198 035 71030	10nF 16V 0402
2992	3198 035 71040	100nF 10% 16V 0402
2993	2020 552 96618	1nF 10% 50V 0402
2994	2020 021 91871	470µF 20% 16V
2995	3198 035 71040	100nF 10% 16V 0402
2996	4822 124 80151	47µF 16V

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3000	3198 031 05620	5.6kΩ 5% 0.01W 0402
3001	2322 702 70398	3.9Ω 5% 0603
3002	4822 117 13601	22kΩ 5% 0402
3003	2322 702 70398	3.9Ω 5% 0603
3004	4822 117 13601	22kΩ 5% 0402
3005	3198 031 05620	5.6kΩ 5% 0.01W 0402
3006	4822 117 13545	100Ω 1% 0402
3007	3198 031 04720	4.7kΩ 5% 0402
3008	3198 031 04730	47Ω 5% 0402
3009	4822 117 11297	100kΩ 5% 0.1W
3010	4822 117 13548	1kΩ 5% 0402
3011	4822 117 13543	470Ω 5% 0402
3013	4822 117 13545	100Ω 1% 0402
3015	4822 117 13605	Jumper 0402
3017	4822 117 13605	Jumper 0402
3019	4822 117 13545	100Ω 1% 0402
3020	4822 117 13548	1kΩ 5% 0402
3021	2322 706 72702	2.7kΩ 1% 0402
3022	4822 117 13606	10kΩ 5% 0.01W 0402
3023	3198 031 01090	10Ω 5% 0.01W 0402
3024	3198 031 01090	10Ω 5% 0.01W 0402
3025	3198 031 01090	10Ω 5% 0.01W 0402
3026	3198 031 06890	68Ω 5% 0402
3027	3198 031 01090	10Ω 5% 0.01W 0402
3028	4822 117 11297	100kΩ 5% 0.1W
3029	4822 117 13548	1kΩ 5% 0402
3030	4822 117 11297	100kΩ 5% 0.1W
3032	3198 031 02240	220kΩ 5% 0.1W 0402
3035	4822 117 13545	100Ω 1% 0402
3040	3198 031 06830	68kΩ 5% 0.01W 0402
3048	4822 117 13606	10kΩ 5% 0.01W 0402
3049	4822 117 13545	100Ω 1% 0402
3050	4822 117 13545	100Ω 1% 0402
3051	4822 117 13545	100Ω 1% 0402
3052	4822 117 13605	Jumper 0402
3056	3198 031 04720	4.7kΩ 5% 0402
3057	4822 117 13545	100Ω 1% 0402
3058	4822 117 13543	470Ω 5% 0402
3059	4822 117 13548	1kΩ 5% 0402
3060	3198 031 03930	39kΩ 5% 0402
3063	3198 031 06890	68Ω 5% 0402
3065	3198 031 06810	680Ω 5% 0.01W 0402
3066	3198 031 06890	68Ω 5% 0402
3067	3198 031 01090	10Ω 5% 0.01W 0402
3068	3198 031 06890	68Ω 5% 0402
3069	3198 031 01090	10Ω 5% 0.01W 0402
3070	4822 117 13545	100Ω 1% 0402
3072	3198 031 06890	68Ω 5% 0402
3073	3198 031 01530	15kΩ 5% 0.01W 0402
3074	4822 117 11297	100kΩ 5% 0.1W
3075	3198 031 04720	4.7kΩ 5% 0402
3077	3198 031 04720	4.7kΩ 5% 0402
3078	3198 031 04720	4.7kΩ 5% 0402
3079	3198 031 04720	4.7kΩ 5% 0402
3080	5322 117 13034	1.5kΩ 1% 0.063W 0603
3081	4822 117 13545	100Ω 1% 0402
3082	3198 031 04720	4.7kΩ 5% 0402
3083	3198 031 04720	4.7kΩ 5% 0402
3084	4822 117 13545	100Ω 1% 0402
3085	3198 031 04720	4.7kΩ 5% 0402
3086	4822 117 13602	2.2kΩ 5% 0.01W 0402
3087	4822 117 13606	10kΩ 5% 0.01W 0402
3088	3198 031 03320	3.3kΩ 5% 0402
3089	3198 031 01540	150kΩ 5% 0402
3091	4822 117 13545	100Ω 1% 0402
3092	3198 031 04720	4.7kΩ 5% 0402
3093	3198 031 04720	4.7kΩ 5% 0402
3094	3198 031 01090	10Ω 5% 0.01W 0402
3096	3198 031 03320	3.3kΩ 5% 0402
3097	3198 031 04720	4.7kΩ 5% 0402
3098	4822 117 13545	100Ω 1% 0402
3101	4822 051 30151	150Ω 5% 0.062W
3102	4822 117 12891	220kΩ 1%
3103	4822 051 30151	150Ω 5% 0.062W
3104	4822 117 12925	47kΩ 1% 0.063W 0603
3105	4822 051 30151	150Ω 5% 0.062W
3106	4822 117 12891	220kΩ 1%
3107	4822 117 12925	47kΩ 1% 0.063W 0603
3108	4822 051 30151	150Ω 5% 0.062W
3109	4822 051 30759	75Ω 5% 0.062W
3110	4822 051 30331	330Ω 5% 0.062W
3111	4822 051 30273	27kΩ 5% 0.062W
3112	4822 051 30682	6.8Ω 5% 0.062W
3113	4822 051 30759	75Ω 5% 0.062W
3114	4822 051 30331	330Ω 5% 0.062W
3115	4822 051 30759	75Ω 5% 0.062W
3116	4822 051 30331	330Ω 5% 0.062W
3117	4822 051 30331	330Ω 5% 0.062W
3118	4822 051 30759	75Ω 5% 0.062W
3119	4822 051 30689	68Ω 5% 0.063W 0603
3120	4822 051 30008	Jumper 0603
3121	4822 051 30759	75Ω 5% 0.062W
3122	4822 051 30331	330Ω 5% 0.062W
3123	4822 051 30102	1kΩ 5% 0.062W
3124	4822 051 30151	150Ω 5% 0.062W
3125	4822 051 30151	150Ω 5% 0.062W
3126	4822 117 12891	220kΩ 1%
3127	4822 051 30151	150Ω 5% 0.062W
3128	4822 117 12925	47kΩ 1% 0.063W 0603
3129	4822 051 30151	150Ω 5% 0.062W
3130	4822 117 12891	220kΩ 1%
3131	4822 051 30151	150Ω 5% 0.062W
3132	4822 117 12925	47kΩ 1% 0.063W 0603
3133	4822 051 30151	150Ω 5% 0.062W

3134	4822 051 30682	6.8Ω 5% 0.062W
3135	4822 051 30273	27kΩ 5% 0.062W
3136	4822 051 30331	330Ω 5% 0.062W
3137	4822 051 30759	75Ω 5% 0.062W
3138	4822 117 13632	100kΩ 1% 0603 0.62W
3139	4822 117 13632	100kΩ 1% 0603 0.62W
3140	4822 051 30689	68Ω 5% 0.063W 0603
3141	4822 051 30102	1kΩ 5% 0.062W
3142	4822 051 30331	330Ω 5% 0.062W
3143	4822 051 30759	75Ω 5% 0.062W
3144	4822 051 30151	150Ω 5% 0.062W
3145	4822 051 30151	150Ω 5% 0.062W
3146	4822 051 30151	150Ω 5% 0.062W
3147	4822 051 30151	150Ω 5% 0.062W
3148	4822 051 30151	150Ω 5% 0.062W
3149	4822 051 30151	150Ω 5% 0.062W
3150	4822 051 30151	150Ω 5% 0.062W
3151	4822 051 30151	150Ω 5% 0.062W
3152	4822 117 12891	220kΩ 1%
3153	4822 051 30151	150Ω 5% 0.062W
3155	4822 117 12891	220kΩ 1%
3156	4822 051 30151	150Ω 5% 0.062W
3169	4822 051 30479	47Ω 5% 0.062W
3251	4822 117 11151	1Ω 5%
3259	4822 117 13606	10kΩ 5% 0.01W 0402
3260	3198 031 06820	6.8kΩ 5% 0.01W 0402
3266	3198 031 04720	4.7kΩ 5% 0402
3267	5322 117 13031	5.6kΩ 1% 0.063W 0603
3268	2322 704 63302	3.3kΩ 1% 0603
3270	4822 117 13602	2.2kΩ 5% 0.01W 0402
3271	4822 117 13543	470Ω 5% 0402
3273	3198 031 02240	220kΩ 5% 0.1W 0402
3274	4822 117 13601	22kΩ 5% 0402
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 117 13606	10kΩ 5% 0.01W 0402
3305	4822 117 13606	10kΩ 5% 0.01W 0402
3309	4822 117 13606	10kΩ 5% 0.01W 0402
3311	4822 051 30103	10kΩ 5% 0.062W
3319	4822 051 30273	27kΩ 5% 0.062W
3320	4822 051 30183	18kΩ 5% 0.062W
3321	4822 051 30222	2.2kΩ 5% 0.062W
3322	4822 051 30682	6.8Ω 5% 0.062W
3323	4822 051 30222	2.2kΩ 5% 0.062W
3327	4822 117 13548	1kΩ 5% 0402
3328	4822 117 13545	100Ω 1% 0402
3329	4822 117 13545	100Ω 1% 0402
3340	4822 117 13601	22kΩ 5% 0402
3342	4822 117 13606	10kΩ 5% 0.01W 0402
3343	3198 031 04720	4.7kΩ 5% 0402
3344	4822 117 13548	1kΩ 5% 0402
3345	3198 031 04720	4.7kΩ 5% 0402
3346	2322 706 75603	56kΩ 1% 0402
3347	3198 031 08210	820Ω 5% 0,5W
3348	3198 031 04720	4.7kΩ 5% 0402
3349	3198 031 01820	1.8kΩ 5% 0.01W 0402
3357	4822 117 13548	1kΩ 5% 0402
3358	4822 117 13545	100Ω 1% 0402
3359	3198 031 03910	390Ω 1% 0402
3370	3198 031 06810	680Ω 5% 0.01W 0402
3371	4822 117 13545	100Ω 1% 0402
3372	4822 117 13545	100Ω 1% 0402
3374	5322 117 11726	10Ω 5%
3378	4822 117 13545	100Ω 1% 0402
3380	4822 117 13606	10kΩ 5% 0.01W 0402
3381	4822 117 13606	10kΩ 5% 0.01W 0402
3382	4822 117 13606	10kΩ 5% 0.01W 0402
3383	4822 117 13606	10kΩ 5% 0.01W 0402
3386	4822 117 13545	100Ω 1% 0402
3389	4822 117 13545	100Ω 1% 0402
3390	4822 117 13545	100Ω 1% 0402
3391	4822 117 13545	100Ω 1% 0402
3392	4822 117 13545	100Ω 1% 0402
3393	4822 117 13545	100Ω 1% 0402
3394	3198 031 07590	75Ω 5% 0402
3401	2350 035 10229	4 x 22Ω 5%
3402	2350 035 10229	4 x 22Ω 5%
3403	2350 035 10229	4 x 22Ω 5%
3404	2350 035 10229	4 x 22Ω 5%
3405	2350 035 10229	4 x 22Ω 5%
3406	2350 035 10229	4 x 22Ω 5%
3407	2350 035 10229	4 x 22Ω 5%
3408	2350 035 10229	4 x 22Ω 5%
3409	2350 035 10229	4 x 22Ω 5%
3410	2350 035 10229	4 x 22Ω 5%
3411	2350 035 10229	4 x 22Ω 5%
3412	2350 035 10229	4 x 22Ω 5%
3413	2350 035 10229	4 x 22Ω 5%
3414	3198 031 02290	22Ω 5% 0.1W 0402
3415	3198 031 01090	10Ω 5% 0.01W 0402
3416	4822 117 13548	1kΩ 5% 0402
3417	4822 117 13548	1kΩ 5% 0402
3418	3198 031 03910	390Ω 1% 0402
3422	3198 031 02290	22Ω 5% 0.1W 0402
3423	3198 031 03320	3.3kΩ 5% 0402
3424	2322 704 61501	150Ω 1% 0603
3425	4822 117 13606	10kΩ 5% 0.01W 0402
3426	3198 031 03320	3.3kΩ 5% 0402
3428	4822 117 13606	10kΩ 5% 0.01W 0402
3429	4822 117 13606	10kΩ 5% 0.01W 0402
3432	4822 117 13606	10kΩ 5% 0.01W 0402
3433	4822 117 13606	10kΩ 5% 0.01W 0402
3436	4822 117 13606	10kΩ 5% 0.01W 0402
3437	4822 117 13606	10kΩ 5% 0.01W 0402
3438	3198 031 11030	4 x 10kΩ 5% 1206
3439	3198 031 11030	4 x 10kΩ 5% 1206
3440	3198 031 11030	4 x 10kΩ 5% 1206
3441	3198 031 11030	4 x 10kΩ 5% 1206
3442	3198 031 11030	4 x 10kΩ 5% 1206
3443	4822 117 13606	10kΩ 5% 0.01W 0402
3444	4822 051 30103	10kΩ 5% 0.062W
3446	5322 117 13017	100Ω 1% 0.063W 0603
3447	3198 031 02290	22Ω 5% 0.1W 0402
3448	3198 031 01090	10Ω 5% 0.01W 0402
3501	4822 117 12706	10kΩ 1% 0.063W 0603
3502	4822 117 12706	10kΩ 1% 0.063W 0603
3503	2322 704 61501	150Ω 1% 0603
3531	4822 117 13606	10kΩ 5% 0.01W 0402
3532	4822 117 13606	10kΩ 5% 0.01W 0402
3534	4822 117 13548	1kΩ 5% 0402
3536	4822 117 13606	10kΩ 5% 0.01W 0402
3538	3198 031 11030	4 x 10kΩ 5% 1206
3539	3198 031 11030	4 x 10kΩ 5% 1206
3540	3198 031 11030	4 x 10kΩ 5% 1206
3544	3198 031 11030	4 x 10kΩ 5% 1206
3545	3198 031 11030	4 x 10kΩ 5% 1206
3546	3198 031 11030	4 x 10kΩ 5% 1206
3547	3198 031 11030	4 x 10kΩ 5% 1206
3548	4822 117 13606	10kΩ 5% 0.01W 0402
3549	4822 051 30102	1kΩ 5% 0.062W
3550	4822 051 30102	1kΩ 5% 0.062W
3551	4822 051 30102	1kΩ 5% 0.062W
3552	4822 051 30102	1kΩ 5% 0.062W
3553	4822 051 30102	1kΩ 5% 0.062W
3560	4822 117 11297	100kΩ 5% 0.1W
3561	4822 117 11297	100kΩ 5% 0.1W
3562	4822 117 11297	100kΩ 5% 0.1W
3563	4822 117 13548	1kΩ 5% 0402
3564	3198 031 01220	1.2kΩ 5% 0.01W 0402
3565	4822 117 13548	1kΩ 5% 0402
3566	4822 117 13548	1kΩ 5% 0402
3567	4822 117 13548	1kΩ 5% 0402
3568	4822 117 13548	1kΩ 5% 0402
3579	4822 117 13548	1kΩ 5% 0402
3580	4822 117 13543	470Ω 5% 0402
3581	3198 031 04730	47Ω 5% 0402
3605	4822 117 13545	100Ω 1% 0402
3606	4822 117 13545	100Ω 1% 0402
3607	4822 117 13545	100Ω 1% 0402
3608	4822 117 13545	100Ω 1% 0402
3609	4822 117 13545	100Ω 1% 0402
3610	4822 117 13601	22kΩ 5% 0402
3612	4822 117 13543	470Ω 5% 0402
3613	3198 031 02290	22Ω 5% 0.1W 0402
3614	3198 031 02290	22Ω 5% 0.1W 0402
3615	3198 031 02290	22Ω 5% 0.1W 0402
3616	3198 031 02290	22Ω 5% 0.1W 0402
3617	3198 031 02290	22Ω 5% 0.1W 0402
3618	3198 031 02290	22Ω 5% 0.1W 0402
3619	3198 031 08210	820Ω 5% 0,5W
3620	4822 117 13632	100kΩ 1% 0603 0.62W
3621	4822 117 13601	22kΩ 5% 0402
3622	4822 117 13601	22kΩ 5% 0402
3623	4822 117 13601	22kΩ 5% 0402
3624	4822 117 13601	22kΩ 5% 0402
3625	4822 117 13601	22kΩ 5% 0402
3626	4822 117 13601	22kΩ 5% 0402
3633	4822 117 13545	100Ω 1% 0402
3634	4822 117 13545	100Ω 1% 0402
3635	4822 117 13545	100Ω 1% 0402
3638	4822 117 13545	100Ω 1% 0402
3639	4822 117 13545	100Ω 1% 0402
3641	4822 117 13597	330Ω 5% 0402 0.01W
3642	4822 117 13597	330Ω 5% 0402 0.01W
3643	4822 117 13597	330Ω 5% 0402 0.01W
3644	4822 117 13597	330Ω 5% 0402 0.01W
3645	4822 117 13597	330Ω 5% 0402 0.01W
3646	4822 117 13597	330Ω 5% 0402 0.01W
3680	4822 051 30222	2.2kΩ 5% 0.062W
3681	4822 051 30221	220Ω 5% 0.062W
3683	4822 051 30759	75Ω 5% 0.062W
3684	4822 051 30759	75Ω 5% 0.062W
3685	4822 051 30222	2.2kΩ 5% 0.062W
3686	4822 051 30221	220Ω 5% 0.062W
3687	4822 051 30759	75Ω 5% 0.062W
3689	4822 051 30101	100Ω 5% 0.062W
3693	4822 051 30103	10kΩ 5% 0.062W
3696	4822 051 30103	10kΩ 5% 0.062W
3697	4822 051 30103	10kΩ 5% 0.062W
3698	4822 051 30151	150Ω 5% 0.062W
3699	4822 051 30151	150Ω 5% 0.062W
3700	4822 117 12925	47kΩ 1% 0.063W 0603
3701	4822 117 13548	1kΩ 5% 0402
3702	4822 117 13606	10kΩ 5% 0.01W 0402
3703	4822 117 13606	10kΩ 5% 0.01W 0402
3705	4822 117 13606	10kΩ 5% 0.01W 0402
3711	4822 117 13605	Jumper 0402
3712	4822 117 13606	10kΩ 5% 0.01W 0402
3713	4822 117 13606	10kΩ 5% 0.01W 0402
3718	4822 117 13605	Jumper 0402
3723	4822 117 13548	1kΩ 5% 0402
3724	4822 117 13606	10kΩ 5% 0.01W 0402
3729	3198 031 03320	3.3kΩ 5% 0402
3730	3198 031 03320	3.3kΩ 5% 0402
3731	4822 117 13543	470Ω 5% 0402
3732	4822 117 13548	1kΩ 5% 0402
3733	4822 117 13543	470Ω 5% 0402
3739	4822 117 13601	22kΩ 5% 0402
3740	4822 117 13601	22kΩ 5% 0402
3741	4822 117 11297	100kΩ 5% 0.1W
3742	4822 117 13601	22kΩ 5% 0402
3743	4822 117 13601	22kΩ 5% 0402
3745	4822 117 11297	100kΩ 5% 0.1W
3752	3198 031 01510	150Ω 5% 0.01W 0402
3753	3198 031 01510	150Ω 5% 0.01W 0402
3781	4822 117 12925	47kΩ 1% 0.063W 0603
3782	4822 051 30151	150Ω 5% 0.062W
3783	4822 051 30103	10kΩ 5% 0.062W
3784	4822 051 30102	1kΩ 5% 0.062W
3788	4822 051 30102	1kΩ 5% 0.062W
3836	4822 117 13606	10kΩ 5% 0.01W 0402
3838	4822 117 13606	10kΩ 5% 0.01W 0402
3876	3198 031 06890	68Ω 5% 0402
3877	3198 031 06890	68Ω 5% 0402
3879	3198 031 06890	68Ω 5% 0402
3883	3198 031 06890	68Ω 5% 0402
3886	4822 117 13606	10kΩ 5% 0.01W 0402
3887	4822 117 13606	10kΩ 5% 0.01W 0402
3910	4822 117 13602	2.2kΩ 5% 0.01W 0402
3911	4822 117 13548	1kΩ 5% 0402
3930	4822 117 12917	1Ω 5% 0.062W
3931	4822 117 12917	1Ω 5% 0.062W
3932	2322 704 61002	1kΩ 1%
3933	2322 704 63302	3.3kΩ 1% 0603
3951	4822 117 12917	1Ω 5% 0.062W
3952	4822 117 12917	1Ω 5% 0.062W
3953	2322 704 61002	1kΩ 1%
3954	2322 704 63302	3.3kΩ 1% 0603
3955	4822 117 13606	10kΩ 5% 0.01W 0402
3958	3198 031 01530	15kΩ 5% 0.01W 0402
4002	4822 117 13605	Jumper 0402
4005	4822 117 13605	Jumper 0402
4007	4822 117 13605	Jumper 0402
4008	4822 117 13605	Jumper 0402
4017	4822 117 13605	Jumper 0402
4018	4822 117 13605	Jumper 0402
4023	4822 117 13605	Jumper 0402
4062	4822 117 13605	Jumper 0402
4327	4822 051 30008	Jumper 0603
4331	4822 051 30008	Jumper 0603
4333	4822 051 30008	Jumper 0603
4334	4822 051 30008	Jumper 0603
4360	4822 117 13605	Jumper 0402
4361	4822 117 13605	Jumper 0402
4362	4822 117 13605	Jumper 0402
4363	4822 117 13605	Jumper 0402
4444	4822 051 30008	Jumper 0603
4580	4822 117 13605	Jumper 0402
4581	4822 117 13605	Jumper 0402
4583	4822 117 13605	Jumper 0402
4593	4822 117 13605	Jumper 0402
4601	4822 117 13605	Jumper 0402
4602	4822 117 13605	Jumper 0402
4603	4822 117 13605	Jumper 0402
4608	4822 117 13605	Jumper 0402
4708	4822 051 30008	Jumper 0603
4710	4822 117 13605	Jumper 0402
4711	4822 117 13605	Jumper 0402
4720	4822 051 30008	Jumper 0603
4836	4822 051 30008	Jumper 0603
4838	4822 051 30008	Jumper 0603

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5001	2422 536 00667	1000µF 20% 7032
5002	4822 157 11716	Bead 30Ω at 100MHz
5003	4822 157 11716	Bead 30Ω at 100MHz
5004	4822 157 11716	Bead 30Ω at 100MHz
5005	4822 157 11716	Bead 30Ω at 100MHz
5006	4822 157 11716	Bead 30Ω at 100MHz
5007	4822 157 11716	Bead 30Ω at 100MHz

5008	4822 157 11716	Bead 30Ω at 100MHz
5010	3198 018 64790	47µF 5% 1008
5060	4822 157 11716	Bead 30Ω at 100MHz
5066	3198 018 51080	1µH 10% 0603
5067	3198 018 51080	1µH 10% 0603
5070	4822 157 11716	Bead 30Ω at 100MHz
5071	2422 549 42896	Bead 120Ω 100MHz
5072	2422 549 42896	Bead 120Ω 100MHz
5139	4822 051 20008	Jumper 0805
5251	2422 549 45333	Bead 120Ω 100MHz
5252	2422 549 45333	Bead 120Ω 100MHz
5257	2422 549 45333	Bead 120Ω 100MHz
5258	2422 549 45333	Bead 120Ω 100MHz
5262	2422 535 94134	10µH 20% 0805
5267	2422 536 00339	33µ 20%
5268	2422 535 94995	10µF 20% 10145
5304	4822 157 11499	Bead 60Ω 100MHz
5309	3198 018 31290	12µH 10%
5321	3198 018 33970	0.39µF 10% 0805
5324	4822 157 71334	0.68µH
5370	4822 157 11716	Bead 30Ω at 100MHz
5371	4822 157 11716	Bead 30Ω at 100MHz
5372	4822 157 11716	Bead 30Ω at 100MHz
5530	2422 549 45333	Bead 120Ω 100MHz
5560	4822 157 11716	Bead 30Ω at 100MHz
5580	4822 157 71304	1µH
5605	2422 549 45333	Bead 120Ω 100MHz
5607	2422 549 45333	Bead 120Ω 100MHz
5636	2422 549 45333	Bead 120Ω 100MHz
5680	2422 549 45333	Bead 120Ω 100MHz
5683	2422 549 45333	Bead 120Ω 100MHz
5684	2422 549 45333	Bead 120Ω 100MHz
5685	2422 549 45333	Bead 120Ω 100MHz
5686	2422 549 45333	Bead 120Ω 100MHz
5687	2422 549 45333	Bead 120Ω 100MHz
5720	4822 157 11716	Bead 30Ω at 100MHz
5721	4822 157 11716	Bead 30Ω at 100MHz
5722	4822 157 11716	Bead 30Ω at 100MHz
5874	2422 549 45333	Bead 120Ω 100MHz
5910	2422 536 00667	1000µF 20% 7032
5920	2422 549 45333	Bead 120Ω 100MHz
5930	2422 535 94134	10µH 20% 0805
5931	2422 536 00689	220µF 20%
5932	2422 535 94134	10µH 20% 0805
5952	2422 535 94134	10µH 20% 0805
5953	2422 536 00689	220µF 20%
5954	2422 535 94134	10µH 20% 0805
5956	2422 549 45333	Bead 120Ω 100MHz
5957	2422 549 45333	Bead 120Ω 100MHz
5984	2422 549 45333	Bead 120Ω 100MHz
5985	2422 549 45333	Bead 120Ω 100MHz
5986	2422 549 45333	Bead 120Ω 100MHz
5987	2422 549 45333	Bead 120Ω 100MHz
5988	2422 549 45333	Bead 120Ω 100MHz
5989	2422 549 45333	Bead 120Ω 100MHz
5990	2422 549 45333	Bead 120Ω 100MHz
5991	2422 549 45333	Bead 120Ω 100MHz
5994	2422 549 45333	Bead 120Ω 100MHz
5996	2422 549 45333	Bead 120Ω 100MHz
5997	2422 549 45333	Bead 120Ω 100MHz
5998	2422 549 45333	Bead 120Ω 100MHz

6001	4822 130 11397	BAS316
6002	4822 130 11397	BAS316
6005	9340 553 52115	BAS321
6020	4822 130 11397	BAS316
6021	4822 130 11397	BAS316
6075	4822 130 80622	BAT54
6076	4822 130 80622	BAT54
6121	4822 130 11416	PDZ6.8B
6143	4822 130 11416	PDZ6.8B
6259	9322 128 70685	SMSS14
6262	3198 010 10720	SS24
6267	3198 010 10730	SS36
6270	4822 130 10837	UDZS8.2B
6310	4822 130 11397	BAS316
6323	4822 130 11525	1SS356
6328	4822 130 11416	PDZ6.8B
6329	4822 130 11416	PDZ6.8B
6330	4822 130 11416	PDZ6.8B
6331	4822 130 11416	PDZ6.8B
6563	9322 102 64685	UDZ2.7B
6564	4822 130 11416	PDZ6.8B
6565	4822 130 10838	UDZ3.3B
6604	4822 130 11397	BAS316
6605	4822 130 11397	BAS316
6634	9322 102 64685	UDZ2.7B
6635	9322 102 64685	UDZ2.7B
6638	9322 102 64685	UDZ2.7B
6639	9322 102 64685	UDZ2.7B
6693	4822 130 11397	BAS316
6701	3198 020 55680	BZX384-C5V6
6910	5322 130 34337	BAV99
6911	9340 548 71115	PDZ33B
6930	9322 128 70685	SMSS14
6951	9322 128 70685	SMSS14

7001	9339 693 90135	BCP69-25
7002	9340 425 20115	BC847BS
7003	9339 693 90135	BCP69-25
7004	3198 010 42310	BC847BW
7005	9340 547 13215	BSH103
7011		For SW see item 0601
7012	3198 010 42310	BC847BW
7013	3198 010 42310	BC847BW
7014	3198 010 42310	BC847BW
7015	9322 208 05668	SM NE555D
7016	9322 208 05668	SM NE555D
7017	9322 208 05668	SM NE555D
7018	5322 130 60159	BC846B
7019	5322 130 60159	BC846B
7051	3104 317 07851	SW (check Prod. Survey)
7054	3104 317 06681	SW (check Prod. Survey)
7070	9340 547 13215	BSH103
7075	4822 130 11155	PDTC114ET
7099	4822 209 17226	M24C08-WMN6
7119	5322 130 60159	BC846B
7138	5322 130 60159	BC846B
7260	9322 139 16668	LF33CPT
7262	9322 202 34668	L5973D
7271	3198 010 42310	BC847BW
7272	3198 010 42310	BC847BW
7320	3198 010 42310	BC847BW
7370	9340 550 49115	PUMH7
7371	9340 550 49115	PUMH7
7372	9340 550 49115	PUMH7
7376	9340 425 10115	BC857BS
7377	9340 425 10115	BC857BS
7401	9322 206 86671	GM1501-BD
7416	9322 157 51685	SI12301DS
7501	9322 199 17671	K4D263238M-QC50
7530		For SW see item 7051
7532	9352 691 71115	NE56610-27GW
7560	9352 334 10118	TDA9178T/N1
7561	3198 010 42310	BC847BW
7562	9322 199 24668	L7808CD2T
7563	4822 209 73852	PMBT2369
7579	4822 130 11155	PDTC114ET
7580	9322 199 16668	M74HC590T
7581	9322 199 16668	M74HC590T
7582	9322 201 05671	CY62256LL-70ZC
7583	9351 870 00118	74HC573PW
7584	9351 870 00118	74HC573PW
7585	3198 010 42310	BC847BW
7604	9352 607 39118	74LVC14APW
7605	4822 209 60792	74HC4053D
7606	9322 199 56668	ADG781BCP
7607	9322 199 80668	SM5301BS-G
7693		For SW see item 7054
7706	9351 742 70118	74HC08PW
7708	9340 550 49115	PUMH7
7710	9340 310 50215	PDTA143ET
7713	3198 010 42310	BC847BW
7714	3198 010 42310	BC847BW
7740	9322 183 05668	TS482ID
7887	3198 010 42310	BC847BW
7910	4822 130 42804	BC817-25
7920	9322 163 24668	L78M08CDT
7930	5322 209 90529	MC34063AD
7952	5322 209 90529	MC34063AD
7954	9322 157 51685	SI12301DS
7955	4822 130 11155	PDTC114ET
7992	9322 142 88668	LF25CDT
7995	9322 189 19668	LD1086D2T18

LCD Supply 30"/32" [AS]

Various

1007▲	4822 071 55002	Fuse T5A 250V
1304	2422 025 10647	Connector 4p m
1304	2422 025 10648	Connector 8p m
1305	4822 267 10735	Connector 3p
1306	2422 025 16374	Connector 2p m
1307	2422 025 10647	Connector 4p m
1308	4822 265 20723	Connector 2p
1309	2422 025 11143	Connector 3p m
1400▲	4822 253 50145	Fuse 3.15A T
1401▲	4822 252 11224	19181I1(1,0A)
1402▲	4822 252 60151	DSP-501N-A21F
1410▲	4822 265 11253	Fuse holder
1411▲	4822 265 11253	Fuse holder
1450▲	2422 132 07411	Relay 1p 5V 5A G5PA-1
1M02	2422 025 11244	Connector 7p m

2000▲	2252 811 95022	1.5nF 20% 250V
2002	4822 124 11767	470µF 20% 25V
2003	4822 124 80061	1000µF 20% 25V
2007	4822 126 14583	470nF 10% 16V 0805
2008	4822 126 14583	470nF 10% 16V 0805
2009	2238 867 18101	100pF 1% 50V 0603
2010	4822 124 40207	100µF 20% 25V
2011	2022 333 00119	10nF 5% 1.6 KV
2012	4822 126 13862	1.5nF 10% 2kV
2013	4822 126 13862	1.5nF 10% 2kV
2014▲	2252 811 95018	2.2nF 20% 250V
2014▲	4822 126 13451	2.2nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	2238 586 59812	100nF 20% 50V 0603
2017	2022 333 00119	10nF 5% 1.6 KV
2019	5322 126 11583	10nF 10% 50V 0603
2020	2020 021 00012	2200µF 20% 16V
2021	2020 021 00012	2200µF 20% 16V
2022	4822 124 11583	2200µF 20% 35V
2022	4822 124 81168	2200U 20% 35V
2023	4822 126 14583	470nF 10% 16V 0805
2024	2020 552 96326	220nF 10% 16V
2025	2020 552 96683	220nF 10% 50V
2026	4822 126 14238	2.2nF 50V 0603
2028	5322 126 11578	1nF 10% 50V 0603
2029	5322 126 11578	1nF 10% 50V 0603
2033	2020 552 96683	220nF 10% 50V
2034	2238 867 18101	100pF 1% 50V 0603
2035	2238 867 18101	100pF 1% 50V 0603
2036	4822 126 14583	470nF 10% 16V 0805
2037	4822 126 14583	470nF 10% 16V 0805
2038	4822 124 11583	2200µF 20% 35V
2038	4822 124 81168	2200U 20% 35V
2039	4822 126 14583	470nF 10% 16V 0805
2039	5322 126 11583	10nF 10% 50V 0603
2040	4822 126 14249	560pF 10% 50V 0603
2041	2020 552 96683	220nF 10% 50V
2042	2020 552 96683	220nF 10% 50V
2043	2020 552 96683	220nF 10% 50V
2044	5322 126 11578	1nF 10% 50V 0603
2045	5322 126 11578	1nF 10% 50V 0603
2046	3198 017 34730	47nF 16V 0603
2047	5322 126 11583	10nF 10% 50V 0603
2048	5322 126 11578	1nF 10% 50V 0603
2050	5322 126 11578	1nF 10% 50V 0603
2051	2020 552 96683	220nF 10% 50V
2052	2020 552 96683	220nF 10% 50V
2053	2020 552 96683	220nF 10% 50V
2060	4822 126 14238	2.2nF 50V 0603
2061	4822 126 14238	2.2nF 50V 0603
2062	4822 126 14238	2.2nF 50V 0603
2063	4822 126 13881	470pF 5% 50V
2064	4822 126 13881	470pF 5% 50V
2065	4822 126 14238	2.2nF 50V 0603
2071	5322 126 11578	1nF 10% 50V 0603
2072	5322 126 11578	1nF 10% 50V 0603
2077	4822 126 14238	2.2nF 50V 0603
2290	5322 126 11583	10nF 10% 50V 0603
2291	4822 126 13881	470pF 5% 50V
2292	2020 021 91354	1000µF 20% 50V
2292	4822 124 12417	2200µF 20% 25V
2293	4822 126 13881	470pF 5% 50V
2294	2020 021 91354	1000µF 20% 50V
2294	4822 124 12417	2200µF 20% 25V
2400▲	2222 338 22474	470nF 20% 275V
2407▲	2252 811 95065	220pF 10% 250V
2503	2020 024 90718	10µF 20% 450V
2803	2222 365 55563	56nF 10% 400V
2804	2222 365 55563	56nF 10% 400V
2816	2020 024 90749	330µF 20% 400V

3000▲	4822 052 10478	4.7Ω 5% 0.33W
3001	4822 051 30101	100Ω 5% 0.062W
3002	4822 051 30103	10kΩ 5% 0.062W
3002	4822 051 30223	22kΩ 5% 0.062W
3003	4822 117 13632	100kΩ 1% 0603 0.62W
3004	4822 051 30273	27kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30103	10kΩ 5% 0.062W
3008	4822 051 30331	330Ω 5% 0.062W
3009	4822 051 30332	3.3Ω 5% 0.062W
3010	4822 051 30471	47Ω 5% 0.062W

3011	4822 051 30471	47Ω 5% 0.062W
3012	4822 051 30153	15kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014▲	4822 052 10101	100Ω 5% 0.33W
3015▲	4822 052 10479	47Ω 5% 0.33W
3016	4822 051 30332	3.3Ω 5% 0.062W
3017▲	4822 052 10101	100Ω 5% 0.33W
3018▲	4822 052 10479	47Ω 5% 0.33W
3019	4822 051 30332	3.3Ω 5% 0.062W
3020	4822 051 30332	3.3Ω 5% 0.062W
3021	4822 117 12139	22Ω 5% 0.062W
3021	4822 117 12971	15Ω 5% 0603 0.62W
3022	4822 051 30681	680Ω 5% 0.062W
3023	4822 051 30153	15kΩ 5% 0.062W
3024	2322 704 63303	33kΩ 1% 0603
3025	4822 117 12903	1.8kΩ 1% 0.063W 0603
3026	4822 101 11383	Trimmer 470Ω 30% linear
3027	4822 117 13632	100kΩ 1% 0603 0.62W
3028	4822 051 30332	3.3Ω 5% 0.062W
3029	4822 051 30332	3.3Ω 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	4822 051 30103	10kΩ 5% 0.062W
3032	4822 051 30103	10kΩ 5% 0.062W
3033▲	4822 052 11108	1Ω 5% 0.5W
3034	4822 051 30102	1kΩ 5% 0.062W
3035	4822 051 30332	3.3Ω 5% 0.062W
3036	4822 117 13632	100kΩ 1% 0603 0.62W
3039	4822 051 30102	1kΩ 5% 0.062W
3040	5322 117 13056	8.2kΩ 1% 0.063W 0603
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30123	12kΩ 5% 0.1W
3043	4822 051 30109	10Ω 5% 0.062W
3044	4822 051 30471	47Ω 5% 0.062W
3045	4822 117 12139	22Ω 5% 0.062W
3045	4822 117 12971	15Ω 5% 0603 0.62W
3046	4822 117 12139	22Ω 5% 0.062W
3046	4822 117 12971	15Ω 5% 0603 0.62W
3047	4822 051 30479	47Ω 5% 0.062W
3048	4822 051 30272	2.7kΩ 5% 0.062W
3049	4822 051 30333	33kΩ 5% 0.062W
3050	4822 050 28204	820kΩ 1% 0.6W
3051	4822 051 30472	4.7Ω 5% 0.062W
3052	2322 704 61603	16kΩ 1% 0603
3053	4822 050 26804	680kΩ 1% 0.6W
3054	4822 051 30472	4.7Ω 5% 0.062W
3055	4822 051 30221	220Ω 5% 0.062W
3056	4822 051 30221	220Ω 5% 0.062W
3057	4822 051 30221	220Ω 5% 0.062W
3058	4822 053 20565	5.6MΩ 5% 0.25W
3059	4822 051 30222	2.2kΩ 5% 0.062W
3061	4822 051 30683	68kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 117 13632	100kΩ 1% 0603 0.62W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30101	100Ω 5% 0.062W
3068	4822 051 30222	2.2kΩ 5% 0.062W
3070	4822 051 30102	1kΩ 5% 0.062W
3071	4822 051 30103	10kΩ 5% 0.062W
3075	4822 051 30102	1kΩ 5% 0.062W
3100	4822 051 30102	1kΩ 5% 0.062W
3100	4822 051 30109	10Ω 5% 0.062W
3292	4822 051 30561	560Ω 5% 0.062W
3400▲	2122 550 00158	VDR 1mA 612V
3401▲	4822 053 21475	4.7MΩ 5% 0.5W
3402▲	4822 053 21475	4.7MΩ 5% 0.5W
3403▲	4822 053 21475	4.7MΩ 5% 0.5W
3404	4822 116 83872	220Ω 5% 0.5W
3810	2322 257 41123	12kΩ 5% 5W
3999	4822 117 12925	47kΩ 1% 0.063W 0603
9002	4822 051 30008	Jumper 0603
9009	4822 051 30008	Jumper 0603
9030	4822 051 30008	Jumper 0603
9047	4822 051 30008	Jumper 0603
9085	4822 051 30008	Jumper 0603

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5001	2422 531 02444	Transf. S13932-04Y
5002▲	8204 000 77311	Transf. 2652.0001
5004	4822 526 10704	Bead 100MHz
5005	4822 157 11411	Bead 100MHz
5005	4822 526 10704	Bead 100MHz
5007	4822 157 11411	Bead 100MHz
5007	4822 526 10704	Bead 100MHz
5008	4822 157 11411	Bead 100MHz
5008	4822 526 10704	Bead 100MHz
5009	4822 157 11411	Bead 100MHz
5010	4822 157 11411	Bead 100MHz
5013	4822 157 11411	Bead 100MHz
5013	4822 526 10704	Bead 100MHz
5015	4822 157 11411	Bead 100MHz
5016	4822 157 11411	Bead 100MHz
5017	4822 526 10704	Bead 100MHz
5025	4822 526 10704	Bead 100MHz
5026	4822 526 10704	Bead 100MHz
5027	4822 526 10704	Bead 100MHz
5028	4822 526 10704	Bead 100MHz
5029	4822 526 10704	Bead 100MHz
5030	4822 526 10704	Bead 100MHz
5031	4822 526 10704	Bead 100MHz
5032	4822 526 10704	Bead 100MHz
5034	4822 526 10704	Bead 100MHz
5040	4822 157 11411	Bead 100MHz
5041	4822 526 10704	Bead 100MHz
5291	2422 536 00776	33µH 10%
5292	2422 536 00776	33µH 10%
5293	2422 536 00776	33µH 10%
5401▲	2422 549 43291	Filter 47mH 2A
5403	3104 308 21191	Coil DTH40323H65

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6002	4822 130 11397	BAS316
6003	4822 130 11397	BAS316
6004	4822 130 11397	BAS316
6004	4822 130 80622	BAT54
6005	4822 130 11397	BAS316
6005	4822 130 80622	BAT54
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6009	4822 130 11152	UDZ18B
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	9322 197 30685	SML4744
6013	9322 197 30685	SML4744
6017	4822 130 11397	BAS316
6020	4822 130 11397	BAS316
6021	9322 206 26687	STPS20H100CT
6022	4822 130 11148	UDZ4.7B
6023	4822 130 11397	BAS316
6025	9322 206 26687	STPS20H100CT
6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6030	4822 130 11397	BAS316
6044	9322 207 11687	STPS20L45CT
6045	9322 207 11687	STPS20L45CT
6051	4822 130 11397	BAS316
6054	4822 130 11551	UDZS10B
6077	9322 202 55685	BYG22D
6078	9322 202 55685	BYG22D
6079	9322 202 55685	BYG22D
6080	9322 202 55685	BYG22D
6081	9340 548 67115	PDZ22B
6291	4822 130 11572	STPS8H100F
6293	4822 130 11572	STPS8H100F
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6506▲	4822 130 83147	DF06M
6807▲	9322 199 74682	GBJ6J-B15

7001	9322 108 21682	MC34067P
7002▲	9322 149 04682	TCET1102
7004	3198 010 42310	BC847BW
7005	9322 192 18687	STP15NK50ZFP
7005	9322 205 26687	FQPF18N50V2
7006	9322 205 26687	FQPF18N50V2
7007	3198 010 42320	BC857BW
7008	3198 010 42320	BC857BW
7009	3198 010 42320	BC857BW
7010	4822 209 16406	TL431ACD
7010	9322 125 09668	TL431AID
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW
7030	3198 010 42310	BC847BW
7031	3198 010 42310	BC847BW

Side I/O Panel [D]

Various

0900	2422 026 05133	Connector SVHS 4p f
0901	4822 267 10975	Connector 3p
0902	4822 267 31014	Socket head phone
0936	2422 025 12485	Connector 11p m
1900	2422 026 05133	Connector SVHS 4p f
1901	4822 267 10975	Connector 3p
1902	4822 267 31014	Socket head phone
1936	2422 025 12485	Connector 11p m
8936	3104 311 06121	Cable 11p560/11p

⊣⊢

2903	5322 122 32531	100pF 5% 50V
2904	5322 122 32531	100pF 5% 50V
2905	4822 122 33177	10nF 20% 50V
2905	5322 122 32654	22nF 10% 63V 0805
2906	4822 122 33177	10nF 20% 50V
2906	5322 122 32654	22nF 10% 63V 0805

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3901	4822 117 11373	100Ω 1% 0805
3902	4822 116 52201	75Ω 5% 0.5W
3903	4822 117 11373	100Ω 1% 0805
3904	4822 116 52201	75Ω 5% 0.5W
3905	4822 050 11002	1kΩ 1% 0.4W
3906	4822 050 11002	1kΩ 1% 0.4W
3908	4822 050 11002	1kΩ 1% 0.4W
3910	4822 116 52276	3.9Ω 5% 0.5W
3911	4822 050 21003	10kΩ 1% 0.6W
3912	4822 050 21003	10kΩ 1% 0.6W
4901	4822 051 20008	Jumper 0805
4903	4822 051 20008	Jumper 0805

Top Control Panel [E]

Various

0053	3104 308 10551	TC assy knob R LCD 30"
0055	3104 308 10561	TC assy knob L LCD 30"
0057	3104 304 25831	TC frame LCD 30"
0058	3104 308 10571	TC assy knob M LCD 30"
0345	4822 267 10459	Connector 3p
1701	2422 128 02778	Tact switch
1702	2422 128 02778	Tact switch
1703	2422 128 02778	Tact switch
1704	2422 128 02778	Tact switch
1705	2422 128 02778	Tact switch
8345	3104 311 07211	Cable 3P/560/3P

⏦

3001	4822 051 20391	390Ω 5% 0.1W
3003	4822 117 13528	200Ω 1% 0.125W 0805
3005	4822 117 11951	2kΩ 1% 0.1W
3009	4822 117 11534	1.1kΩ 1% 0.1W
3011	4822 117 10845	620Ω 1% 0.1W
3999	4822 051 20471	470Ω 5% 0.1W
9001	4822 051 20008	Jumper 0805
9003	4822 051 20008	Jumper 0805
9005	4822 051 20008	Jumper 0805
9006	4822 051 20008	Jumper 0805

LED + Switch Panel [J]

Various

0320	2422 025 16545	Connector 10p m
1101	2422 128 03123	Switch 2p 2pos 30V

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2107	4822 124 12095	100µF 20% 16V
2120	3198 030 71090	10µF 20% 35V
2126	4822 126 14583	470nF 10% 16V 0805

⏦

3101	4822 051 30151	150Ω 5% 0.062W
3103	4822 051 30331	330Ω 5% 0.062W
3105	4822 051 30681	680Ω 5% 0.062W
3106	4822 051 30151	150Ω 5% 0.062W
3107	4822 051 30471	47Ω 5% 0.062W
3108	4822 051 30103	10kΩ 5% 0.062W
3109	4822 051 30101	100Ω 5% 0.062W
3120	4822 051 30472	4.7Ω 5% 0.062W
3121	4822 051 30103	10kΩ 5% 0.062W
3122	4822 051 30332	3.3Ω 5% 0.062W
3123	4822 051 30332	3.3Ω 5% 0.062W
3124	4822 051 30102	1kΩ 5% 0.062W
3126	2322 702 60335	3.3MΩ 5% 0603
3127	2322 702 60335	3.3MΩ 5% 0603
3128	4822 051 30472	4.7Ω 5% 0.062W
4101	4822 051 30008	Jumper 0603
4107	4822 051 30008	Jumper 0603
4108	4822 051 30008	Jumper 0603
4111	4822 051 30008	Jumper 0603

5100	2422 549 43769	Bead 30Ω 100MHz

6101	4822 130 11564	UDZ3.9B
6103	4822 130 83915	TLMV3100
6105	4822 130 11564	UDZ3.9B
6127	9322 140 63685	TEMD5000

7103	3198 010 42320	BC857BW
7105	3198 010 42320	BC857BW
7107	9322 206 81667	TSOP34836YA1
7120	5322 209 82941	LM358D

Stand-by Audio Panel [SA]

Various

1304	2422 025 10647	Connector 4p m
1305	4822 267 10735	Connector 3p
1306	2422 025 16374	Connector 2p m
1307	2422 025 10647	Connector 4p m
1309	2422 025 11143	Connector 3p m
1312	2422 025 18166	Connector 16p m
1313	2422 025 18166	Connector 16p m
1317	2422 025 10772	Connector 12p m
1735	2422 025 10768	Connector 3p m
1735	4822 267 10918	Connector 3P
1736	2422 025 10768	Connector 3p m
1739	2422 025 10769	Connector 9p m
1M02	2422 025 11244	Connector 7p m
1M03	2422 025 10771	Connector 10p m
1M10	2422 025 09406	Connector 4p m
1M46	2422 025 10655	Connector 11p m

2101	4822 121 51598	2.2nF 5% 400V
2102	4822 124 40207	100µF 20% 25V
2103	2020 552 94427	100pF 5% 50V
2105	2020 552 94427	100pF 5% 50V
2107	2020 024 90718	10µF 20% 450V
2108	2020 024 90718	10µF 20% 450V
2109	2022 552 05679	1µF 10% 16V 0805
2110	2022 552 05679	1µF 10% 16V 0805
2111	4822 121 43526	47nF 5% 250V
2112	5322 126 11583	10nF 10% 50V 0603
2123	2238 586 59812	100nF 20% 50V 0603
2124	4822 124 40248	10µF 20% 63V
2129	5322 126 11578	1nF 10% 50V 0603
2131	2238 586 15641	22nF 10% 50V 0603
2132	4822 124 40207	100µF 20% 25V
2140	4822 124 40248	10µF 20% 63V
2141	4822 126 14583	470nF 10% 16V 0805
2144	2022 552 05679	1µF 10% 16V 0805
2145	4822 126 13881	470pF 5% 50V
2149	2022 552 05679	1µF 10% 16V 0805
2150	4822 124 12379	220µF 25V
2152	4822 121 70162	10nF 5% 400V
2153	5322 126 11582	6.8nF 10% 63V
2154	3198 017 31530	15nF 20% 50V 0603
2160	4822 124 21913	1µF 20% 63V
2163	4822 124 40207	100µF 20% 25V
2506▲	2252 811 95017	470pF 10% 250V
2507	4822 126 13682	100pF 5% 1kV
2508	4822 124 40764	22µF 100V
2510	2020 021 91668	2200µF 20% 10V
2511	4822 124 12379	220µF 25V
2513	4822 126 10206	2.2nF 10% 500V
2515	4822 126 14238	2.2nF 50V 0603
2533	4822 124 40207	100µF 20% 25V
2534	2022 552 05679	1µF 10% 16V 0805
2535	5322 126 11583	10nF 10% 50V 0603
2536	5322 126 11583	10nF 10% 50V 0603
2537	4822 126 14238	2.2nF 50V 0603
2538	5322 126 11583	10nF 10% 50V 0603
2539	2022 552 05679	1µF 10% 16V 0805
2540	5322 126 11583	10nF 10% 50V 0603
2544	5322 126 11583	10nF 10% 50V 0603
2701	4822 124 12379	220µF 25V
2702	5322 126 11578	1nF 10% 50V 0603
2704	5322 126 11578	1nF 10% 50V 0603
2705	2020 552 96684	470nF 10% 25V 0805
2706	2222 580 15649	100nF 10% 50V 0805
2707	4822 126 14585	100nF 10% 0805 50V
2708	2020 552 96326	220nF 10% 16V
2709	4822 126 13881	470pF 5% 50V
2710	4822 126 13881	470pF 5% 50V
2711	5322 126 11578	1nF 10% 50V 0603
2712	2020 552 96683	220nF 10% 50V
2713	2020 552 96684	470nF 10% 25V 0805
2714	3198 017 33330	33nF 20% 16V 0603
2715	5322 126 11578	1nF 10% 50V 0603
2716	4822 126 14241	330pF 0603 50V
2717	5322 121 42498	680nF 5% 63V
2718	4822 122 33761	22pF 5% 50V
2719	5322 126 11578	1nF 10% 50V 0603
2720	2020 552 96326	220nF 10% 16V
2721	4822 126 13881	470pF 5% 50V
2722	4822 126 13881	470pF 5% 50V
2725	2020 552 94427	100pF 5% 50V
2726	3198 017 33330	33nF 20% 16V 0603
2727	5322 126 11578	1nF 10% 50V 0603
2728	4822 126 14241	330pF 0603 50V
2729	5322 121 42498	680nF 5% 63V
2764	4822 126 14491	2.2µF 10V 0805
2766	4822 126 14491	2.2µF 10V 0805
2768	4822 124 40255	100µF 20% 63V
2769	4822 124 40255	100µF 20% 63V
2777	2020 552 96683	220nF 10% 50V
2778	4822 124 40769	4.7µF 20% 100V
2779	2020 552 96683	220nF 10% 50V
2780	2020 552 96683	220nF 10% 50V
2781	2020 552 96683	220nF 10% 50V
2783	4822 124 41751	47µF 20% 50V
2786	2238 586 15641	22nF 10% 50V 0603
2788	4822 124 40255	100µF 20% 63V
2789	2020 552 96683	220nF 10% 50V
2790	4822 124 40255	100µF 20% 63V

3100	4822 051 30101	100Ω 5% 0.062W
3101	4822 053 20475	4.7MΩ 5% 0.25W
3102	2312 915 11002	1kΩ 1% 0.5W
3103	2312 915 11002	1kΩ 1% 0.5W
3104	4822 051 30479	47Ω 5% 0.062W
3105	4822 051 30221	220Ω 5% 0.062W
3106	4822 051 30391	390Ω 5% 0.062W
3107	4822 051 30391	390Ω 5% 0.062W
3108	4822 053 10478	4.7Ω 5% 1W
3109	4822 051 30391	390Ω 5% 0.062W
3110	4822 051 30391	390Ω 5% 0.062W
3111	4822 053 10152	1.5kΩ 5% 1W
3112	4822 051 30391	390Ω 5% 0.062W
3113	4822 117 12139	22Ω 5% 0.062W
3114	4822 051 30221	220Ω 5% 0.062W
3117	4822 051 30479	47Ω 5% 0.062W
3122	4822 051 30471	47Ω 5% 0.062W
3123	4822 051 30109	10Ω 5% 0.062W
3124	4822 051 30339	33Ω 5% 0.062W
3125	4822 117 12971	15Ω 5% 0603 0.62W
3126	4822 051 30103	10kΩ 5% 0.062W
3127	4822 051 30562	5.6kΩ 5% 0.063W 0603
3128	4822 117 13608	4.7Ω 5% 0603 0.62W
3132	4822 051 30333	33kΩ 5% 0.062W
3134	4822 051 30102	1kΩ 5% 0.062W
3135	4822 051 30331	330Ω 5% 0.062W
3138	4822 051 30105	1MΩ 5% 0.062W
3140	4822 051 30223	22kΩ 5% 0.062W
3141	4822 051 30471	47Ω 5% 0.062W
3142	4822 051 30123	12kΩ 5% 0.1W
3145	4822 051 30472	4.7Ω 5% 0.062W
3146	4822 051 30479	47Ω 5% 0.062W
3147	4822 051 30223	22kΩ 5% 0.062W
3148	4822 051 30479	47Ω 5% 0.062W
3149	4822 051 30103	10kΩ 5% 0.062W
3150	4822 051 30101	100Ω 5% 0.062W
3152	4822 051 30102	1kΩ 5% 0.062W
3153	4822 051 30223	22kΩ 5% 0.062W
3155	4822 050 21003	10kΩ 1% 0.6W
3156	4822 051 30102	1kΩ 5% 0.062W
3157	4822 051 30223	22kΩ 5% 0.062W
3158	4822 051 30479	47Ω 5% 0.062W
3159	4822 051 30479	47Ω 5% 0.062W
3160	4822 051 30102	1kΩ 5% 0.062W
3161	4822 051 30123	12kΩ 5% 0.1W
3171	4822 051 30101	100Ω 5% 0.062W
3172	4822 051 30333	33kΩ 5% 0.062W
3175	4822 051 30103	10kΩ 5% 0.062W
3176	4822 051 30103	10kΩ 5% 0.062W
3509	4822 053 10222	2,2kΩ 5% 1W
3511	4822 051 30683	68kΩ 5% 0.062W
3512	4822 051 30471	47Ω 5% 0.062W
3513	4822 051 30333	33kΩ 5% 0.062W
3515	4822 117 13632	100kΩ 1% 0603 0.62W
3516	4822 051 30472	4.7Ω 5% 0.062W
3517	4822 051 30223	22kΩ 5% 0.062W
3528	4822 051 30472	4.7Ω 5% 0.062W
3529	4822 051 30101	100Ω 5% 0.062W
3530	4822 051 30223	22kΩ 5% 0.062W
3531	4822 051 30153	15kΩ 5% 0.062W
3532	4822 051 30472	4.7Ω 5% 0.062W
3533	4822 051 30152	1.5Ω 5% 0.062W
3534	4822 051 30103	10kΩ 5% 0.062W
3535	4822 051 30222	2.2kΩ 5% 0.062W
3536	4822 051 30103	10kΩ 5% 0.062W
3538	4822 051 30101	100Ω 5% 0.062W
3539	4822 051 30471	47Ω 5% 0.062W
3540	4822 051 30222	2.2kΩ 5% 0.062W
3541	4822 051 30222	2.2kΩ 5% 0.062W
3542	4822 051 30103	10kΩ 5% 0.062W
3544	4822 051 30221	220Ω 5% 0.062W
3560	4822 051 30682	6.8Ω 5% 0.062W
3561	4822 051 30392	3.9Ω 5% 0.063W 0603
3562	4822 117 13608	4.7Ω 5% 0603 0.62W
3701	4822 051 30103	10kΩ 5% 0.062W
3702	4822 051 30682	6.8Ω 5% 0.062W
3703	4822 051 30333	33kΩ 5% 0.062W
3704	4822 117 10833	10kΩ 1% 0.1W
3705	4822 051 20828	8.2Ω 5% 0.1W
3706	4822 051 30472	4.7Ω 5% 0.062W
3707	4822 051 30683	68kΩ 5% 0.062W
3708	4822 051 30563	56kΩ 5% 0.062W
3709	4822 117 11503	220Ω 1% 0.1W
3710	4822 051 30223	22kΩ 5% 0.062W
3711	4822 050 21204	120kΩ 1% 0,6W
3712	4822 051 30103	10kΩ 5% 0.062W
3713	2312 915 11202	1.2kΩ 1% 0.5W
3714	4822 117 12925	47kΩ 1% 0.063W 0603
3715	4822 117 12925	47kΩ 1% 0.063W 0603
3716	4822 117 12925	47kΩ 1% 0.063W 0603
3717	4822 117 13632	100kΩ 1% 0603 0.62W
3718	4822 117 13632	100kΩ 1% 0603 0.62W
3721	4822 051 30472	4.7Ω 5% 0.062W
3722	4822 051 30683	68kΩ 5% 0.062W
3723	4822 051 30563	56kΩ 5% 0.062W
3724	4822 117 11503	220Ω 1% 0.1W
3725	4822 051 30223	22kΩ 5% 0.062W
3726	4822 117 11503	220Ω 1% 0.1W
3727	4822 117 11503	220Ω 1% 0.1W
3743	4822 117 11449	2.2kΩ 5% 0.1W 0805
3746	4822 051 30223	22kΩ 5% 0.062W
3747	4822 050 24703	47kΩ 1% 0.6W
3747	4822 117 12925	47kΩ 1% 0.063W 0603
3748	4822 051 30471	47Ω 5% 0.062W
3750	4822 117 11449	2.2kΩ 5% 0.1W 0805
3756	4822 117 11449	2.2kΩ 5% 0.1W 0805
3757	4822 117 11449	2.2kΩ 5% 0.1W 0805
3759	4822 051 30332	3.3Ω 5% 0.062W
3760	4822 051 30332	3.3Ω 5% 0.062W
3761	4822 051 10102	1kΩ 2% 0.25W
3761	4822 051 20109	10Ω 5% 0.1W
3762	4822 051 30222	2.2kΩ 5% 0.062W
3763	4822 051 30222	2.2kΩ 5% 0.062W
3764	4822 051 10102	1kΩ 2% 0.25W
3764	4822 051 20109	10Ω 5% 0.1W
3765	4822 051 30103	10kΩ 5% 0.062W
3765	4822 117 13632	100kΩ 1% 0603 0.62W
3766	4822 051 30103	10kΩ 5% 0.062W
3766	4822 117 13632	100kΩ 1% 0603 0.62W
3767	4822 051 30103	10kΩ 5% 0.062W
3767	4822 117 13632	100kΩ 1% 0603 0.62W
3768	4822 051 30103	10kΩ 5% 0.062W
3768	4822 117 13632	100kΩ 1% 0603 0.62W
3790	4822 051 30222	2.2kΩ 5% 0.062W
3790	4822 051 30682	6.8Ω 5% 0.062W
3791	4822 051 30222	2.2kΩ 5% 0.062W
3791	4822 051 30682	6.8Ω 5% 0.062W
3792	4822 051 30153	15kΩ 5% 0.062W
3792	4822 051 30183	18kΩ 5% 0.062W
3793	4822 051 30153	15kΩ 5% 0.062W
3793	4822 051 30183	18kΩ 5% 0.062W
3798	4822 051 30153	15kΩ 5% 0.062W
3999	4822 051 30472	4.7Ω 5% 0.062W
9020	4822 051 30008	Jumper 0603
9717	4822 051 30008	Jumper 0603
9737	4822 051 30008	Jumper 0603

5102	4822 526 10704	Bead 100MHz
5103	4822 526 10704	Bead 100MHz
5104	4822 157 11411	Bead 100MHz
5105	4822 157 11716	Bead 30Ω at 100MHz
5106	3198 018 31090	10µH 10% 0805
5108	4822 526 10704	Bead 100MHz
5110	4822 157 71736	10µH 5%
5500▲	3104 308 21181	Transformer BS25320-00
5504	2422 536 00776	33µH 10%
5505	4822 157 11411	Bead 100MHz

5506	4822 157 11411	Bead 100MHz
5507	2422 536 00433	15µH 10%
5701	2422 536 00385	68µH 10%
5702	2422 536 00385	68µH 10%
5703	4822 157 11716	Bead 30Ω at 100MHz
5705	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11411	Bead 100MHz
5708	4822 157 11411	Bead 100MHz
5711	4822 157 11411	Bead 100MHz
5712	4822 157 11411	Bead 100MHz
5730	2422 549 00112	Line filt. 50V 3A
5731	2422 549 00112	Line filt. 50V 3A

6103	4822 130 10871	SBYV27-200
6104	9340 548 69115	PDZ27B
6105	4822 130 11522	UDZ15B
6106	9340 548 66115	PDZ20B
6108	4822 130 80622	BAT54
6114	4822 130 10871	SBYV27-200
6115	4822 130 80622	BAT54
6116	3198 020 55680	BZX384-C5V6
6120	4822 130 11397	BAS316
6121	4822 130 11397	BAS316
6122	9322 129 34685	BZM55-C3V9
6130	9340 548 61115	PDZ12B
6132	4822 130 11416	PDZ6.8B
6133	4822 130 11397	BAS316
6134	4822 130 11397	BAS316
6140	4822 130 41487	BYV95C
6142	4822 130 80622	BAT54
6144	4822 130 11397	BAS316
6147	9322 200 23685	SML4736
6148	4822 130 11397	BAS316
6149	3198 020 55680	BZX384-C5V6
6150	9340 292 50135	BZG03-C200
6151	9340 548 71115	PDZ33B
6153	9340 292 50135	BZG03-C200
6156	4822 130 11397	BAS316
6504	9340 418 70133	BYV27-600
6505	9322 161 78682	SB360L-7024
6511	9340 548 61115	PDZ12B
6531	4822 130 11522	UDZ15B
6532	4822 130 11397	BAS316
6540	4822 130 80622	BAT54
6562	9340 548 67115	PDZ22B
6701	4822 130 11397	BAS316
6702	4822 130 11551	UDZS10B
6703	4822 130 11551	UDZS10B

7100	3198 010 42320	BC857BW
7101	9340 219 30115	BC817-25W
7102	9322 160 34687	FQPF3N60
7102	9322 194 27687	STP3NK60ZFP
7105	3198 010 42320	BC857BW
7131	9340 557 69127	PHX9NQ20T
7140	3198 010 42310	BC847BW
7150⚠	9322 149 04682	TCET1102
7501⚠	9322 149 04682	TCET1102
7505	3198 010 42320	BC857BW
7506	3198 010 42310	BC847BW
7507	3198 010 42310	BC847BW
7508	3198 010 42310	BC847BW
7509	3198 010 42310	BC847BW
7511	9337 331 10215	BST82
7512	9340 422 80115	PMSTA42
7531	9340 436 50115	BSP030
7532	3198 010 42310	BC847BW
7560	9340 219 30115	BC817-25W
7700	9322 163 86682	TDA7490L
7701	3198 010 42310	BC847BW
7703	3198 010 42310	BC847BW
7704	3198 010 42310	BC847BW
7705	3198 010 42310	BC847BW
7706	3198 010 42320	BC857BW
7707	3198 010 42310	BC847BW
7708	3198 010 42310	BC847BW
7709	3198 010 42310	BC847BW
7710	3198 010 42310	BC847BW
7711	3198 010 42310	BC847BW

11. Revision List

Manual xxxx xxx xxxx.0

- First release.

Manual xxxx xxx xxxx.1

- Chapter 7: To improve the readability, the PWB layout of the SA panel is splitted in two parts.
- Chapter 8:
  - Default values of White Tone Alignment added.
  - Backlight Voltage Alignment added.
- Chapter 9: Lip sync description added.
- Chapter 10: Correct software codenumbers listed.
- All chapters: small textual and graphical improvements.